ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY

FOR SESSION 1889-90,

WITH



EXAMINATION PAPERS

FOR SESSION 1888-89.

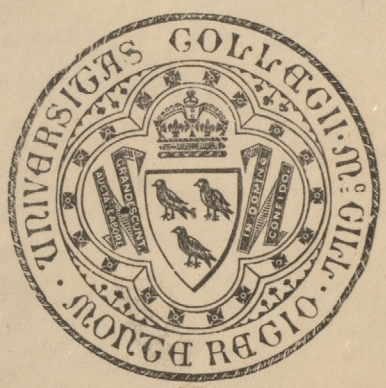
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ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821, AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1889-90.

Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.

1889.

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HIS EXCELLENCY THE RIGHT HONOURABLE LORD STANLEY OF PRESTON, G.C.B., P.C.,

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N. W. TRENHOLME, M.A., D.C.L., Dean of the Faculty of Law.
T. WESLEY MILLS, M.A., M.D., Representative Fellow in Medicine.

(The Governors, Principal and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching the Courses of Study, Matriculation, Graduation and other Educational matters; and to grant Degrees.)

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Professors Emeriti.

[*Retaining their Rank and Titles, but retired from the active work of Instruction.*]

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Emeritus Professor in the Faculty of Arts.

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Emeritus Professor in the Faculty of Law.

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Principal, Logan Professor of Geology and Professor of Natural History. East Wing, McGill College

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Professor of Mathematics, and Peter Redpath Professor of Natural Philosophy, Vice-Principal and Dean of the Faculty of Arts. 5 Prince of Wales Terrace.

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PIERRE J. DAREY, M.A., B.C.L., LL.D., *Officier d' Academie.*
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Vice Dean and Professor of the Theory and Practice of Medicine. 49 Union Avenue.

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WILLIAM GARDNER, M.D.
Professor of Gynæcology. 109 Union Avenue.

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C. H. McLEOD, Ma.E.
Professor of Descriptive Geometry and Superintendent of Meteorological Observatory. Observatory McGill College.

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Professor of Ophthalmology and Otology. 838 Dorchester Street.

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JAMES C. CAMERON, M.D.
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Assistant to Professor of Chemistry, Arts and Applied Science.

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Instructor in Gynæcology.

DONALDA SPECIAL COURSE.

MISS HELEN S. GAIRDNER, Lady Superintendent. — 47 Victoria Street.

LIBRARY.

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General Statement.

SESSION OF 1889-90.

The Fifty-seventh Session of the University, being the Thirty-sixth under the amended Charter, will commence in the Autumn of 1889.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational; and while all possible attention will be given to the character and conduct of students, no interference with their peculiar views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language or Hebrew. The course of study is, with few exceptions, the same for all students in the first two years; but in the third and fourth years extensive options are allowed, more especially in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, English Literature and Modern Languages. Certain exemptions are also allowed to professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

THE DONALDA SPECIAL COURSE IN ARTS provides for the education of women, in separate classes, with course of study, exemptions and honours similar to those for men.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and one Summer Session of three months in the third Academic Year, and leads to the Degree of M.D., C.M.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions, of six months each, and leads to the Degrees of B.C.L. and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*.—Is affiliated in so far as regards Degrees in Arts and Law. [Detailed information may be obtained from REV. JOHN COOK, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond*.—Is affiliated in so far as regards the Intermediate Examinations in Arts. [Detailed information may be obtained from PRINCIPAL BANNISTER, B.A., Richmond, P.Q.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on, and a number of Free Tuitions are granted by the Board of Governors to the Students of these Colleges, when matriculated in Arts.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal*. Principal, REV. WILLIAM M. BARBOUR, D.D., 58 McTavish St.

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada. Principal, REV. D. H. MACVICAR, D.D., LL.D., 69 McTavish St.

THE DIOCESAN COLLEGE OF MONTREAL. Principal, REV. CANON HENDERSON, M.A., D.D., 896 Dorchester St.

THE WESLEYAN COLLEGE OF MONTREAL. Principal, REV. GEORGE DOUGLASS, LL.D., 228 University St.

[Calendars of the above Colleges and all necessary information may be obtained on application to their Principals.]

IV. McGILL NORMAL SCHOOL.

THE McGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas, and may, on conditions stated in the announcement of the School, enter the classes in the Faculty of Arts for Academy Diplomas and for the Degree of B.A. Principal, S. P. ROBINS, LL.D., 30 Belmont St., Montreal.

V. AFFILIATED HIGH SCHOOLS, ETC.

The Trafalgar Institute for the higher education of women, Simpson St., Montreal; Principal, Miss Grace Fairley. The High School of Montreal, Metcalfe St.; Principal, H. Aspinwall Howe, LL.D. The Girls' High School of Montreal, Metcalfe St.; Lady Principal, Mrs. H. H. Fuller. Prince of Wales College, Charlottetown, P.E.I.; Bishop's College School, Lennoxville; St. Francis College School; Misses Symmers and Smith's School, Montreal; Eliock School, Montreal; Girl's High School, St. John, N. B.; Clarenceville Academy; Coaticook Academy; Cowansville Academy; Dunham Academy; Gould Model School; Huntingdon Academy; Inverness Academy; Knowlton Academy; Lachute Academy; Quebec High School, Quebec Girl's High School; Shawville Academy; Sherbrooke Boys' Academy; Sherbrooke Girls' Academy; Stanstead Wesleyan College; St. Johns High School; Sutton Academy; Three Rivers Academy; Waterloo Academy; Waterville Academy.

ACADEMICAL YEAR 1889-90.

SEPTEMBER, 1889.

1 SUNDAY	
2 Monday	Normal School opens.
3 Tuesday	
4 Wednesday	Meeting of Normal School
5 Thursday	Committee.
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	Mat. and Sup. Exn's in Classics Exhib. and Scholarship Exam. Meeting of Faculty of Law.
17 Tuesday	Mat. and Sup. Ex'ns in Math's Exhib. & Scholarship Exam.
18 Wednesday	Mat. & Sup. Ex'ns in English, Logic, Men. and Mor. Phil. Exhib. and Sch. Exm'ns.
19 Thursday	Mat. & Sup. Ex'ns in Modern Lang's and Nat. Sc.; Exhib. and Sch. Exam'ns.
20 Friday	Exhib. and Sch. Ex'ns. Lect's in Arts and App. Sc. begin. Matric. Exam. in Medicine.
21 Saturday	
22 SUNDAY	
23 Monday	Meeting of Faculty of Arts.
24 Tuesday	
25 Wednesday	Matric. Exam. in Law.
26 Thursday	Summer Essays in Applied Sc.
27 Friday	Meeting of Governors. Register Medical Faculty opens.
28 Saturday	Meeting of Faculty of Law.
29 SUNDAY	
30 Monday	Meeting of Fac. of App. Sc.

OCTOBER, 1889.

1 Tuesday	Session of Medical and Law Faculties begins.
2 Wednesday	Meeting Nor. Sch. Committee.
3 Thursday	
4 Friday	Meeting Faculty of Arts.
5 Saturday	
6 SUNDAY	
7 Monday	Founder's Birthd'y. The Wm. Molson Hall opened, 1862.
8 Tuesday	
9 Wednesday	
10 Thursday	
11 Friday	
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	Meeting of Faculty of Arts.
19 Saturday	
20 SUNDAY	
21 Monday	Meeting of Museum Com.
22 Tuesday	Meeting of Library Com.
23 Wednesday	Regular Meeting of Corporation
24 Thursday	Reps. Schol. & Exh. Ac. aud.
25 Friday	
26 Saturday	Meeting of Governors.
27 SUNDAY	
28 Monday	
29 Tuesday	
30 Wednesday	
31 Thursday	

NOVEMBER, 1889.

1 Friday	Meeting of Faculty of Arts.
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	Meeting of Fac. App. Science.
6 Wednesday	Meeting Normal School Com.
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	Meeting of Faculty of Arts.
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	Meeting of Governors
23 Saturday	
24 SUNDAY	
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	Meeting of Faculty of Arts.
30 Saturday	

DECEMBER, 1889.

1 SUNDAY.	
2 Monday	
3 Tuesday	Meeting of Faculty of App. Sc.
4 Wednesday	Meeting of Nor. Sch. Comm.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	Meeting of Fac. of Arts. Lectures in Arts and Ap. Sc. end.
14 Saturday	Exam. Bot. Med. Studs. Examinations in Law.
15 SUNDAY	
16 Monday	Christmas Examinations begin.
17 Tuesday	
18 Wednesday	Examinations in Law.
19 Thursday	Examinations in Law. [in Law.
20 Friday	Meeting of Governors. Exams.
21 Saturday	Christmas Vacation begins. Examinations in Law.
22 SUNDAY	
23 Monday	
24 Tuesday	
25 Wednesday	Christmas-Day.
26 Thursday	
27 Friday	
28 Saturday	
29 SUNDAY	
30 Monday	
31 Tuesday	

JANUARY, 1890.

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	Christmas Vacation ends.
5 SUNDAY	
6 Monday	Lectures in Arts, Law, Med. & App. Sci. recommence,
7 Tuesday	Meeting of Fac. of App. Sci.
8 Wednesday	Meeting of Nor. Sc. Comm.
9 Thursday	
10 Friday	Meeting of Faculty of Arts.
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	Meeting of Faculty of Arts.
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum Com.
21 Tuesday	Meeting of Library Com.
22 Wednesday	Regular Meet'g of Corporation.
23 Thursday	Examiners appointed. Annual Report to Visitor.
24 Friday	Meeting of Governors.
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	Theses for M.A.&LL.D. to be sent in to the Dean of Fac. of Arts. Meeting of Fac. of Arts.

FEBRUARY, 1890.

1 Saturday	Theses for Deg. of B.C.L. to be sent in to Dean of Fac. of Law
2 SUNDAY	Meeting of Examiners.
3 Monday	
4 Tuesday	Meeting of Fac. App. Science.
5 Wednesday	Meeting of Nor. Sch. Comm.
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	Meeting of Faculty of Arts.
15 Saturday	Supplemental Exam's in Arts and Applied Science.
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	No Lectures.
20 Thursday	
21 Friday	Meeting of Governors.
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	Theses for Degree of B.C.L. to
26 Wednesday	be sent in to Dean of Faculty.
27 Thursday	
28 Friday	Meeting of Faculty of Arts.

MARCH, 1890.

1 Saturday	Theses for degree of B.C.L to be sent in to Dean of Faculty.
2 SUNDAY	
3 Monday	
4 Tuesday	Meeting of Fac. of Ap. Science.
5 Wednesday	Meeting of Nor. Sc. Com.
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	Meeting of Fac. of Arts.
15 Saturday	Examinations in Law, and Botany Med. Fac.
16 SUNDAY	
17 Monday	
18 Tuesday	Meeting Fac. App. Sci.
19 Wednesday	Lectures in Medicine end.
20 Thursday	Exam's in Med. begin.
21 Friday	Meeting of Fac. of Arts. Reports of Attendance on Lects.
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	Lects. in Arts and Ap. Sc. end.
28 Friday	Meeting of Governors. Matric. Exam. in Medicine.
29 Saturday	
30 SUNDAY	
31 Monday	

APRIL, 1890.

1 Tuesday	Meeting of Fac. of Ap. Science and Convocation for Degrees in Medicine.
2 Wednesday	
3 Thursday	
4 Friday	Good Friday. Easter Vac. begins
5 Saturday	
6 SUNDAY	Easter.
7 Monday	
8 Tuesday	Easter vacation ends.
9 Wednesday	Meeting of Nor. Sc. Committee
10 Thursday	
11 Friday	Meeting of Fac. of Arts.
12 Saturday	Exams. in Law begin.
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	
19 Saturday	
20 SUNDAY	
21 Monday	Meeting of Museum Committee
22 Tuesday	Meeting of Library Committee
23 Wednesday	Regular meeting of Corporation.
24 Thursday	Meeting of Examiners, & of Fac. Arts and Law.
25 Friday	Meeting of Governors.
26 Saturday	Declaration of result of Exam's.
27 SUNDAY	
28 Monday	
29 Tuesday	Convocation for Degrees in Law and Applied Science.
30 Wednesday	Convocation for Degrees in Arts.

MAY, 1890.

1 Thursday	Meeting of Examiners for Sch. Examinations. Examinations in Normal School begin.
2 Friday	
3 Saturday	
4 SUNDAY	
5 Monday	
6 Tuesday	
7 Wednesday	Meeting Nor. Sch. Committee.
8 Thursday	
9 Friday	
10 Saturday	
11 SUNDAY	
12 Monday	
13 Tuesday	
14 Wenesday	
15 Thursday	
16 Friday	
17 Saturday	
18 SUNDAY	
19 Monday	
20 Tuesday	
21 Wednesday	
22 Thursday	
23 Friday	Meeting of Governors.
24 Saturday	Queen's Birthday.
25 SUNDAY	Whit-Sunday.
26 Monday	
27 Tuesday	
28 Wednesday	
29 Thursday	
30 Friday	Normal Sch. closes for Summer Vacation.
31 Saturday	

JUNE, 1890.

1 SUNDAY	Trinity Sunday.
2 Monday	Examinations for Matric. and Associate in Arts begin.
3 Tuesday	
4 Wednesday	Normal School Committee.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	Declaration of results of School Examinations.
21 Saturday	
22 SUNDAY	
23 Monday	Meetingof Museum Committee.
24 Tuesday	Meeting of Library Committee.
25 Wednesday	Regular Meeting of Corporat'n. Report of Normal School.
26 Thursday	
27 Friday	Meeting of Governors.
28 Saturday	Summr. Sessn. Med. Fac. ends.
29 SUNDAY	
30 Monday	

JULY, 1890.

1 Tuesday	
2 Wednesday	
3 Thursday	
4 Friday	
5 Saturday	
6 SUNDAY	
7 Monday	
8 Tuesday	
9 Wednesday	
10 Thursday	
11 Friday	
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	
19 Saturday	
20 SUNDAY	
21 Monday	
22 Tuesday	
23 Wednesday	
24 Thursday	
25 Friday	
26 Saturday	
27 SUNDAY	
28 Monday	
29 Tuesday	
30 Wednesday	
31 Thursday	

AUGUST, 1890.

1 Friday	
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	Peter Redpath Museum opened 1882.
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	
23 Saturday	
24 SUNDAY	
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	
30 Saturday	

FACULTY OF ARTS.

EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS, SEPTEMBER, 1889.

Day.	Date	First Year.	Second Year.	Third Year.	Hours.
Monday.	16	Greek.	Greek.	Greek.	9 to 12
"	16	Latin.	Latin.	Latin Prose Comp.	2 to 5
"	16			Mathematics.	9 to 12
Tuesday.	17	Mathematics.	Mathematics.	Latin.	9 to 12
"	17			Mathematics.	9 to 12
"	17			Botany.	9 to 12
"	17	Mathematics.	Mathematics.	Ancient History.	2 to 5
"	17			Botany.	2 to 5
Wednesday.	18	English.	English.	English.	9 to 12
"	18			Logic.	9 to 12
"	18	English.		English.	2 to 5
"	18		Chemistry.	Chemistry.	2 to 5
Thursday.	19			Mathematics.	9 to 12
"	19			Botany.	9 to 12
"	19		French.	French.	9 to 12
"	19	Grammar and Comp. (Classics.)	General Paper. (Classics.)	English Composition	2 to 5
Friday.	20		Mathematics.	Mathematics.	9 to 12
			English.		2 to 5

CHRISTMAS EXAMINATIONS, DECEMBER, 1889.

Day.	Date	First Year.	Second Year.	Third Year.	Fourth Year.
Monday.	16	Latin.	Latin.	Mechanics.	Astronomy.
"	16		M'matics, P.M.		
Tuesday.	17	Greek.	Botany.	Greek.	Greek.
"	17		German, P.M.	Botany, P.M.	Latin, P.M.
Wednesday.	18	Mathematics.	Psychology.	Zoology, P.M.	Moral Philosophy
"	18	French, P.M.	French, P.M.	Latin	Geology.
Thursday.	19	Chemistry,	Greek.		
"	19	German, P.M.	German, P.M.		
"	19	Hebrew, P.M.	Hebrew, P.M.		
Friday.	20	English.		Ment. Phil.	

FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS, APRIL, 1890.

Day.	First Year.	Second Year.	Third Year.	Fourth Year.
March.	A.M. P.M.	A.M. P.M.	A.M. P.M.	A.M. P.M.
31 Mon.	Hebrew	Hebrew	Hebrew.	Hebrew.
April. 1 Tue.	....	....	....	B.A. Honours.
2 Wed.	Greek.	Greek.	Mech'ics.	Ethics. Ethics.
3 Thurs.	Latin. Anc. History	Latin. Composition	Latin.	Latin. Latin.
4 Fri.	Good Friday	—Easter Vac. begins.		
9 Wed.	English.	English. English.	Ex. Phy- English. sics.	Ex. Phy- History. sics.
10 Thurs.	Geometry ..... and Arithmetic. ...	Mathematics.....	Greek.....	Math. Physics and B.A. Honours.
11 Fri.	Trigonometry and Algebra.....	Mathematics...	Astr'y and..... Optics.....	B.A. Honours.
14 Mon.	French.....	French.....	Metaphysics.....	Geology.. Geology
15 Tues.	Chemistry.....	.....	.... Zoology	Greek. History.
16 Wed.	Meeting of Exa'ners.	Logic.....	.....	.....
17 Thurs.	.....	Botany.....	French.....	French; B.A. Hon- ours.
18 Fri.	German.	German.....	German.	German; B.A. Hon- ours.
19 Sat.	Meeting of	Examiners.		
21 Mon.	Meeting of	Examiners.		
22 Tues.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
23 Wed.	Meeting of	Examiners.	Meeting of	Corporation.
24 Thurs.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
25 Fri.	Meeting of	Examiners.		
26 Sat.	Meeting of	Examiners.	Declaration	of results.
30 Wed.	Convocation for Degr	ees in Arts.		

The Examinations begin at 9 A.M. and 2 P.M. when not specified otherwise.

FACULTY OF APPLIED SCIENCE.

EXAMINATIONS.—1889-90.

CHRISTMAS, 1889.

The days of the several Examinations will be announced by the Faculty during the Session.

SESSIONAL, 1890.

Days.	First Year.	Second Year.	Third Year.	Fourth Year.
F. Mar. 28	Freehand & Model Drawing.			
S. " 29		Descrpt've Geomet'y	Descrp've Geometry	
Sun. " 30	.....	.....	.....	.....
M. " 31			Theory of Structures	Theory of Structures.
T. April 1		Surveying.	Mach. & Millwork Surveying.	Mach. & Millwork Mineralogy (adv).
W. " 2		Mechanism.	Theory of Structures	Assaying Theo. of Structures
T. " 3		Materials.	Materials.	Materials.
F. " 4				
S. " 5		Prac. Construction.	Pract. Construction.	Pract. Construction.
Sun. " 6	.....	.....	.....	.....
M. " 7		Essay.	Essay.	Essay.
T. " 8		Practical Chemistry.	Practical Chem. Th.of Struc.(adv.)	Theory of Structures (adv.)
W. " 9	English.	Exp. Physics.	Exp. Physics.	Theory of Structures.
T. " 10	Mathematics.	Mathematics.	Mathematics.	
F. " 11			Mach. & Millwork Geology.	Theo. of Structures Geology (adv.)
S. " 12	Mathematics.	Mathematics.	Mathematics.	Theory of Structures (adv.)
Sun. " 13	.....	.....	.....	.....
M. " 14	French.	French.	Mechanical Work.	Mech. Work.
T. " 15	Chemistry.	Zoology (p.m.) Chemistry (a.m.)	Chemistry.	Chemistry.
W. " 16		English.	English.	Heat.
T. " 17			French.	Heat (adv.).
F. " 18	German.	German	German.	Hydraulics.
S. " 19	Mathematics.	Mathematics.	Mathematics.	Hydraulics (adv.).
Sun. " 20	.....	.....	.....	.....
M. " 21				
T. " 22			Mineralogy (adv.)	Geology (adv.).
W. " 23				
T. " 24			Mineralogy (adv.)	Lithology.

Faculty of Arts.

THE PRINCIPAL (Ex-officio).

Professors :— DAWSON.
JOHNSON.
CORNISH.
DAREY.
MURRAY.
HARRINGTON.
MOYSE.

Professors :—PENHALLOW.
COUSSIRAT.

Assistant Prof. :—EATON.

Lecturers :—CHANDLER.
LAFLEUR.
TOEWS.

Dean of the Faculty :—ALEXANDER JOHNSON, LL.D.
Honorary Librarian :—REV. GEORGE CORNISH, LL.D.

[CONTENTS.—*Matriculation*, &c., § I.; *Exhibitions*, &c., § II.; *Course of Study*, § III.; *Examinations, Degrees*, &c., § IV.; *Exemptions*, &c., § V. *Medals*, &c, § VI.; *Licensed Boarding Houses*, § VII.; *Attendance and Conduct*, § VIII.; *Library*, § IX.; *Peter Redpath Museum*, § X.; *Fees*, &c., § XI.; *Courses of Lectures*, § XII.]

The next Session of this Faculty will begin on September 16th, 1889, and will extend to April 30th, 1890.

§I. MATRICULATION AND ADMISSION.

In this University those only who attend Lectures are denominated Students.

Students in the Faculty of Arts are classified as Matriculated or Occasional. Matriculated Students are those who have their names entered in the Matriculation Book; they are subdivided into Undergraduates and Partial Students; Non-matriculated are denominated Occasional Students. The conditions of admission for each, and for students of other Universities are given below.

1. UNDERGRADUATES.

Undergraduates alone can proceed to the degree of B.A. Candidates for admission into the First Year as Undergraduates are required to pass the First Year Entrance Examination. The successful candidates are arranged as First Class, Second Class, and Passed. To the most deserving in the First Class the First Year Exhibitions are awarded. For those who aim at passing only, a minimum course is appointed, and there are two examinations in the year:—

(1) That held in the first week of June, at the same time as the examinations for Associate in Arts. Schools desirous to take advantage of this may send their pupils for examination to McGill College; or, if at a distance, by sending in names of Deputy Examiners for approval, with a list of candidates on or before May 1st, may have papers sent to them. (2) That held at the opening of the session, on September 16th and following days, in McGill College alone.

As the examination is intended as a test of qualification for admission to the classes of the University, certificates of passing are not granted except to those who subsequently attend lectures.

First Year Entrance Examinations.

(a). For Passing only.

Examinations on June 1st in McGill College and local centres; on September 16th in McGill College only.

Greek.—Xenophon, Anabasis, Book I.; Greek Grammar.

Latin.—Cæsar, Bell. Gall. Book I.; and Virgil, Æneid, Book I. lines 1-300; Latin Grammar.

Mathematics.—Arithmetic; Algebra, to Simple Equations (inclusive) Euclid's Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar *including Analysis*. A paper on the leading events of English History. Essay on a subject to be given at the time of the examination.

French.—Grammar up to the beginning of syntax. An easy translation from French into English.

Candidates unable to take French are not excluded, but will be required to study German after entrance.

At the September (but not at the June) examinations an equivalent amount of other books or other authors in Latin and Greek than those named may be

accepted by the Examiners on application made through the Professor of Classics.

Candidates who at the Examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

b). *Higher examination–For First Class, Second Class, Passing, and Exhibitions.*

The Examination will be held on September 16th and following days in McGill College only. (For Exhibitions, see §II).

Greek.—Homer, Iliad, bk. IV.; Xenophon, Anabasis, bk. I.; Demosthenes, Philippics I. and II.

Latin.—Cicero, in Catilinam, Orat. I; Virgil, Æneid, Bk. I; Horace, Odes, Bk. III.

A paper on Greek and Latin Grammar.

Text-books.—Hadley's or Goodwin's Greek Grammar. Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.: or Arnold's Latin Prose Composition by Bradley.

Mathematics.—Euclid, bks. I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

English.—English Grammar and Composition.—(Mason's Grammar, omit Derivation and Appendix.)

Second Year Entrance Examination.

Candidates may be admitted into the Second Year as Undergraduates, if able to pass the Second Year Entrance Examination. The regulations for this correspond to those for the First Year, the higher examination being the same as that for the Second Year Exhibitions (see §II.) held in September, or the Candidate may take the First Year Sessional Examinations held in April. There is besides,

For Passing only,

An Examination on Sept. 17th in McGill College only.

In Classics.—Greek.—Homer, Iliad, Book VI.; Xenophon, Anabasis, Book I.; Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI.; Cicero, Orations against Catiline; Grammar and Prose Composition.

[An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners for entrance into the Second Year, on application made through the Professor of Classics.]

In Mathematics:—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (omitting Propositions 27, 28, 29 of Book VI.)

Algebra.—To end of Quadratic Equations. (Colenso's Alg.)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, English History (Buckley). Essay.

In French.—French Grammar; or (instead of French) *German*, in which knowledge sufficient to enable the Candidate to join the regular class will be required.

In Chemistry.—The Chemistry of the non-metallic Elements, and of the more common metals.

[*Note.*—Candidates unable to pass in French or German are not excluded, but they are required to begin German, and to continue the study of it for two years. Candidates unable to pass in Chemistry are required to attend such of the lectures in the subject as are open to them, and to pass an examination at the end of the Second Year.]

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2. PARTIAL AND OCCASIONAL STUDENTS.—STUDENTS OF OTHER UNIVERSITIES.

PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more courses of Lectures, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

The subjects in which an examination is necessary are: Latin, Greek, Mathematics, English, French.—Candidates are required to appear at the ordinary entrance examinations announced above; but, on application to the Faculty, may, for sufficient cause, have a later day appointed.

OCCASIONAL STUDENTS.—Persons desirous of taking one or two courses of Lectures as Occasional Students may apply to the Dean for entry in his Register, and to the professor or the professors of the subjects of the lectures that they may be satisfied of their fitness, and may subsequently procure from the Secretary tickets for the Lectures.

STUDENTS OF OTHER UNIVERSITIES may be admitted, on the

production of Certificates, to a like standing in this University, after examination by the Faculty.

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3. GENERAL REGULATIONS.

Candidates for entrance into the First Year of the Faculties of Medicine or Applied Science in McGill University may pass in the above examinations.

Every Student is expected to present, on his entrance, a written intimation from his parent or guardian of the name of the minister of religion under whose care and instruction it is desired that the Student should be placed, who will thereupon be invited to put himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavor to establish befitting relations.

Every matriculated student is required to sign in the Matriculation Book the following :—

DECLARATION.

"I hereby declare that I will faithfully observe the statutes, rules and ordi-
"nances of this University of McGill College to the best of my ability."

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4. DIRECTIONS TO CANDIDATES FOR ADMISSION.

Candidates are required :—

(*a*). To present themselves to the Dean, and fill up a form of application for admission. (§I.)

(*b*) To pass the required examinations (§I.). (Unless already passed.)

(*c*) To procure tickets from the Registrar (§XI.), and, if not Occasional Students, to sign the Matriculation Book.

(*d*) To present their tickets to the Dean. (§XI.)

(*e*) To provide themselves with the Academic dress. (§VIII.)

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§ II. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three sessions have elapsed since their Matriculation ; and also to candidates who have obtained what the Faculty may deem equivalent standing in some other University, pro-

vided that application be made before the end of the Session preceding the Examination.

3. Scholarships are divided into two classes :—(1) *Science* Scholarships; (2) *Classical and Modern Language* Scholarships. The subjects of Examination for each are as follows:—

Science Scholarships.—Differential and Integral Calculus; Analytic Geometry; Plane and Spherical Trigonometry; Higher Algebra and Theory of Equations; Botany; Chemistry; Logic. (For subdivision see below.)

Classical and Modern Language Scholarships.—Greek; Latin; English Composition; English Language, Literature, and History; French.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two Sessions have elapsed since their Matriculation; and also to candidates for entrance into the Second Year.

The subjects of Examination are as follows:—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry and French.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time; but four of the First Year Exhibitioners will be granted exemption from the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below).

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every session.

There are at present fifteen Scholarships and Exhibitions:—

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank Montreal :—value, $100 yearly, open to both men and women.

TEN MCDONALD SCHOLARSHIPS AND EXHIBITIONS, founded by W. C. McDonald, Esq., Montreal :—value, $125 each, yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects :—value, $120 yearly.

THE GEORGE HAGUE EXHIBITION, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics :—value, $125 yearly.

THE MAJOR H. MILLS SCHOLARSHIP, founded by bequest of the late Major Hiram Mills :—value, $100 yearly.

THE BARBARA SCOTT SCHOLARSHIP, founded by the late Miss Barbara Scott, for the encouragement of the study of the Classical languages and literature :—value, $100 to $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS OFFERED FOR COMPETITION AT THE OPENING OF THE SESSION, SEPT., 1889.

To Students entering the First Year, three Exhibitions of $125, *and one of* $100.

The First Year Exhibitions will be awarded to the best answerers in the higher First Year Entrance Examination (See § I.), provided there be absolute merit.

But in subsequently distributing the Exhibitions of higher value among the successful candidates, answering in the following subjects will be taken into account also :—

1. A re-translation into Latin of an English version of some passage from one of the easier Latin Prose writers. For specimens see Smith's Principia Latina, Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English :—An Examination upon one of Shakspere's plays. For 1889. —*As you Like it.*

To Students entering the Second Year, two Exhibitions of $125, *and one of* $100.

Subjects of Examination :—

Greek.—Homer, Odyssey, bk. VI.; Herodotus, bk. III., Chaps. 1 to 67; Demosthenes, Olynthiacs I. and II.

Latin.—Virgil, Georgics, bk. 1.; Horace, Odes, bk. I.; Livy, bk. XXII.

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-books.—Cox's General History of Greece. Merivale's General History of Rome. Goodwin's Greek Grammar. Arnold's Greek Prose Composition. Latin Prose through English Idiom (Abbott).

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English Literature.—Mason's Grammar. Shakspere, *As You Like it.* Trench, *Study of Words.*

Chemistry.—Roscoe's Lessons in Elementary Chemistry as far as p. 264.

French.—Darey, Principes de Grammaire française; Lafontaine, les Fables, livres I. and II.; Molière, le Bourgeois Gentilhomme.

A candidate for a Second Year Exhibition to be successful must not, at the special examination, be placed in the Third Class in more than one of the ordinary subjects. The award is made on the aggregate of the marks among those who fulfil this condition.

To Students entering the Third Year, Three Scholarships of $125, *and one of* $120, *tenable for two Years.*

One of these is offered in Mathematics and Logic, and one in Natural Science and Logic, as follows:—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-183 inclusive; Chap. 17, Arts. 225-242 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (Salmon's Conic Sections, subjects of Chaps. 1-13 (omitting Chap. 8), with part of Chap. 14. Lock's Higher Trigonometry; McLelland and Preston's Spherical Trigonometry, Part I. Salmon's Modern Higher Algebra (first four chapters). Todhunter's or Burnside and Panton's Theory of Equations (selected course).
   Logic, as in Jevons' Elementary Lessons on Logic.

2. *Natural Science.*—*Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the order of Phænogams, Pteridophytes and Bryophytes. *Chemistry* as in Roscoe's Lessons in Elementary Chemistry.

   Logic, as in Jevons' Elementary Lessons on Logic.

Two will be given on an Examination in Classics and Modern Languages, as follows:—

Classics—Greek.—Euripides, Medea; Demosthenes, the Olynthiacs; Xenophon, Hellenics, Book I.; Herodotus, Book VIII.; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I.; Virgil, Georgics, Book I.; Terence, Adelphi; Tacitus, Annals, Book I.; Pliny, Select Letters (Pritchard and Bernard; Clarendon Press Series). Greek and Latin Prose Composition.

History.—Text-books.—Rawlinson's Manual of Ancient History; Smith's Student's Greece; Liddell's Rome.

English Language and Literature.—Spalding's English Literature (Chap. VI., Part III., to end of book); Shakspere, Tempest; Milton's Paradise Lost, books I. and II.; Trench, Study of Words.

English Composition.—(High marks will be given for this subject.)

French.—Racine, Britannicus; Molière, les Femmes savantes. French Grammar. Bonnefon, Les Ecrivains célèbres de la France. Translation from English into French.

Classical Subjects for Exhibitions, September, 1890.

FIRST YEAR.—*Greek.*—Homer, Iliad, Bk. IV.; Xenophon, Anabasis, Bk. I.; Demosthenes, Philippics I. and II.

Latin.—Virgil, Æn., Bk. I.; Cicero, In Catilinam, Orat. II. Caesar, Bell. Gall. Bk. I.

SECOND YEAR.—*Greek.*—Homer, Odyssey, Bk. VII.; Demosthenes, Olynthiacs, I. and II.; Herodotus, Bk. III., chaps. 1-67.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I.; Livy, Bk. XXIII.

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor General. Candidates must pass the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight exemptions from fees may be granted by the Board of Governors, from time to time, to the most successful students who may present themselves as can-

didates. By order of the Board one of these is given annually to the *Dux* of the High School of Montreal, and one to the Dux of any other Academy or High School sending up in one year for entrance, three or more candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among its pupils an Annual Bursary in the Faculty of Arts of not less than $80, the Governors will add the amount of the fees of tuition thereto.

Exemptions from fees, not exceeding three in number, may be given to holders of the Academy Diploma of the McGill Normal School, who, on fulfilling the required conditions, enter in the Second Year, if at the Diploma Examination they have taken 75 per cent. of the total marks, with not less than two-thirds of the marks in Latin and in Greek.

By a resolution of the Board of Governors exemptions are granted to students of any affiliated Theological College, recommended by its Principal, and entering the Faculty of Arts either as Undergraduates or as Partial Students.

One exemption is given annually to the pupil (boy or girl) of the Montreal High School holding a Commissioner's exemption from the Schools of the Protestant Commissioners' Montreal, who has taken the highest marks at the A. A. Examination, and is recommended by the Commissioners.

§ III. COURSE OF STUDY.

1. Undergraduates are arranged according to their standing, as Students of the First, Second, Third or Fourth Year. They are required to attend all the courses of Lectures and pass the examinations appointed for their several years, under the Regulations of the Faculty as to attendance and conduct; the only exceptions are those in favor of Honour and Professional Students, stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

FIRST YEAR.

GREEK.—HOMER.—Odyssey, Books XXI-XXIV. (Selections.) Studies in History and Literature.

LATIN.—CICERO.—Select Letters. VIRGIL.—Book IX.—Translation at sight.—Studies in History and Literature. — Latin Prose Composition.

MATHEMATICS.—Arithmetic.—Euclid, six Books,–Algebra to end of Quadratic equatums—Plane Trigonometry, in part.

ENGLISH LANGUAGE AND LITERATURE.

First term.—MILTON'S Comus and BACON'S Essays (selected). Two lectures a week. Analysis, one lecture a week.

Second term.—English Literature, previous to Elizabethan Period.

CHEMISTRY.—Lectures, chiefly on Elementary and Inorganic Chemistry, with Experiments in the Class-Room, and Laboratory work if desired. The whole preparatory to the course in Natural Science.

FRENCH.—DAREY, Principes de Grammaire française.—LAFONTAINE, Choix de Fables,—MOLIERE, L'Avare—Dictation; Colloquial exercises.

Or either of the following:—

GERMAN.—VANDERSMISSEN'S and FRASER'S German Grammar. Adler's Progressive German Reader (selections from Sections 1 and 2). Translations, oral and written. Dictation. Colloquial exercises.

HEBREW.—(For Theological Students). —*Elementary Course.*—Reading and Grammar with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of Genesis. —Text-books, HARPER'S Elements of Hebrew; and Introductory Hebrew Method and Manual.

SECOND YEAR.

GREEK.—EURIPIDES.—Medea.

LATIN.—HORACE.—Epistles, Book II. TACITUS.—Germania, Chap. 1-27. Translation at sight and Latin Prose Composition.

MATHEMATICS.—Arithmetic, Euclid, Algebra and Trigonometry as before.—Logarithms.—Plane Trigonometry, including solution of triangles and applications.

ENGLISH LITERATURE.—A period of English Literature and one play of Shakspere. During the Session of 1888-9.—The leading poets of the nineteenth century. SHAKSPERE, A Midsummer Night's Dream. [Clarendon Press Edition].

PSYCHOLOGY AND LOGIC.—First Term.—Elementary Psychology (Text-book:—MURRAY'S Handbook of Psychology, Book I). Second Term.—Logic (Text-book:—JEVONS' Elementary Lessons in Logic).

BOTANY.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology. *Text-books.*—Gray and Bessey.

FRENCH.—Ponsard, l'Honneur et l'Argent,—RACINE, Phèdre—CONTANSEAU, Précis de littérature française depuis son origine jusqu'à la fin du XVIIIe siècle. Translation into French :—DR. JOHNSON, Rasselas. Dictation. Parsing. Colloquial exercises.

Or either of the following :—

GERMAN.—VANDERSMISSEN'S AND FRASER'S German Grammar. ADLER'S Progressive German Reader (selections from Sections 3-5). TOWNSON, Easy German Stories. Dictation. Colloquial exercises. Translations, oral and written. Parsing.

HEBREW.—(For Theological Students.) —*Intermediate Course.*—Grammar.—Dr. Harper's "Elements and Method."—Translation from Genesis, Exodus, Deuteronomy.—Exercises :—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

For the Intermediate Examinations see § IV.

THIRD YEAR.

GREEK.—LYSIAS.—Contra Eratosthenem.
ÆSCHYLUS.—Prometheus Vinctus.

Or, instead of Greek :—

LATIN.—JUVENAL.—Satires VIII. and XIII.
LIVY.—Book XXI.
Latin Prose Composition.

NATURAL PHILOSOPHY.—MATHEMATICAL PHYSICS.—GALBRAITH AND HAUGHTON'S Mechanics, viz., *Statics*, First 3 chapters, omitting sec. 5, chapter I, and sect. 21, chapter II. ; *Dynamics*, subjects of the First 5 chapters. GALBRAITH AND HAUGHTON'S Hydrostatics.

In addition to the above, the Student must take three subjects out of the two following divisions, headed Literature and Science respectively, the selection being at the option of the student, provided two be taken from one division, and one from the other.

I. Literature, &c.

LATIN OR GREEK.—As above, according as Greek or Latin has been chosen previously.

ENGLISH AND RHETORIC.—*A.* CHAUCER'S Prologue to Canterbury Tales., ed. Morris. *B.* BAIN'S Rhetoric.

MENTAL PHILOSOPHY.—First Term :—The Logic of Induction, as in MILL'S System of Logic, Book III. Second Term :—The Psychology of Cognition, as in MURRAY'S Handbook of Psychology, Book II. Part I.

FRENCH.—(If taken in the first two years).—CORNEILLE, Nicomède—Cogery:—Third French course.—Translation into French:—Morley's Ideal Commonwealths. French Composition. Dictation.—CONTANSEAU, Précis de littérature française, depuis le XVIIIe siècle jusqu'à nos jours.

GERMAN.—(If taken in the first two years.) VANDERSMISSEN'S and FRASER'S German Grammar. SCHILLER, Siege of Antwerp. LESSING, Minna von Barnhelm. History of German Literature from the earliest periods to the close of the 18th century (a brief survey). German composition. Dictation.

HEBREW.—(For Theological Students).—*Advanced Course.*—Gesenius' Grammar—Harper's Elements of Syntax. Exercises continued.—Translation. Reading of the Masoretic notes.—*First Part:* Isaiah; Psalms.—*Second Part:* Job; Ecclesiastes; Jeremiah.

II. Science.

† OPTICS AND DESCRIPTIVE ASTRONOMY.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition; First three chapters. Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

† EXPERIMENTAL PHYSICS.—Electricity, Magnetism, and Sound, as in Ganot's Treatise.

ZOOLOGY AND PALÆONTOLOGY.—Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples, taken as far as possible from Canadian Species. Demonstrations in the Museum. *Text-book.*—Dawson's Hand-book of Zoology,

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FOURTH YEAR.

GREEK.—ÆSCHINES.—Contra Ctesiphontem.

or, instead of Greek:—

LATIN.—TACITUS.—Annals, Book II.
Latin Prose Composition.

NATURAL PHILOSOPHY.—*Mathematical Physics.* (Mechanics and Hydrostatics) as in Third Year, or Astronomy (GALBRAITH AND HAUGHTON) and Optics (GALBRAITH AND HAUGHTON)

MORAL PHILOSOPHY.—First Term.—The Psychological Basis of Ethics. Second Term.—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. The Students are required to write occasional essays on Philosophical subjects.

In addition to the preceding, the Student must take three subjects out of the two following divisions (headed Literature and Science respectively) the selection being at the option of the Student, provided all three are not taken out of the same division.

I. Literature, etc.

LATIN OR GREEK.—As above, according as Greek or Latin has been taken above.

HISTORY.—Lectures on the History of Europe from the downfall of the Roman Empire of the West to the Reformation. Text-books. MYERS Mediæval and Modern History, pp. 1-398. BRYCE, Holy Roman Empire. (omit chaps. 6, 8, 9, 13 and supplementary chapter.)

FRENCH.—(If taken in Third Year) BONNEFON, Les Ecrivains modernes de la France.—Translation into French:—Morley's Ideal Commonwealths. Dictation.—CORNEILLE, Nicomède.

GERMAN.—(If taken in Third Year).—German Grammar and composition. Dictation. FOUQUE, Undine; SCHILLER, Wallenstein.
Outlines of German Literature. GOSTWICK & HARRISON (Chapters 15–24).

HEBREW.—(As in Third Year.)—(For Theological Students).

II. Science.

†ASTRONOMY AND OPTICS.—If not chosen as above.

†EXPERIMENTAL PHYSICS.—Light and Heat, as in GANOT'S Treatise.

MINERALOGY AND GEOLOGY.—1. *Mineralogy and Lithology.* Minerals and rocks especially those important in Geology or useful in the Arts. 2. *Stratigraphy, Chronological Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America. *Text-books.*—Lecture Notes on Geology.

For the B. A. Examinations see § IV.

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† Students claiming exemptions (See § V.), cannot count these subjects for the B.A. if they have not taken the Third Year Mathematical Physics.

NOTES ON THE ORDINARY COURSE FOR B.A.

Instead of two distinct subjects in one of the above divisions in either Third or Fourth Year, the Student may select one subject only, together with an *Additional Course* in the same or any other of his subjects in which such Additional Course may have been provided by the Faculty, under the above rules, provided he has been placed in the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The Additional course is intended to be more than an equivalent, in the amount of work involved, for any of the other subjects in the division.

(For details of additional courses provided see under Section XII.)

Undergraduates are required to study either French or German for two years viz., in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

Undergraduates who have been previously Partial or Occasional Students, and have in that capacity attended a particular Course or Courses of Lectures, may, at the discretion of the Faculty, be exempted from further attendance on these Lectures but no distinction shall in consequence be made between the Examination of such Undergraduates and of those regularly attending Lectures.

HONOUR COURSES.

2. At the examination for the degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided :—[For details see under § XII.]

1. CLASSICAL LANGUAGE AND LITERATURE.
2. MATHEMATICS AND PHYSICS.
3. MENTAL AND MORAL PHILOSOPHY.
4. ENGLISH LANGUAGE, LITERATURE AND HISTORY.
5. GEOLOGY AND OTHER NATURAL SCIENCES.
6. MODERN LANGUAGES WITH HISTORY.
7. SEMITIC LANGUAGES.

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years.

Candidates for Honours are allowed exemptions under conditions stated in V.

§ IV EXAMINATIONS.

COLLEGE EXAMINATIONS.

For Students of McGill College only.

1. There are two Examinations in each year; one at Christmas and the other at the end of the Session. In each of those the students who pass are arranged according to their answering as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examination.

2. Students who fail in any subject at the Christmas Examinations are required to pass a Supplemental Examination (if permission be obtained from the Faculty) on that subject, before admission to the Sessional Examinations.

3. Undergraduates who fail in one subject at the Sessional Examinations of the first two years are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examination of the first two years, or in one subject at the third year Sessional examinations, involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. Application for a Supplemental Examination must in all cases be made to the Faculty. A Partial or Occasional Student is required to pay a fee of $1 for it, if granted. The time for the Supplemental Examination will be fixed by the Faculty; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

For Students of McGill College and of Colleges affiliated in Arts.

I. FOR THE DEGREE OF B.A.

There are three University Examinations :—The *Matriculation* at entrance, the *Intermediate*, at the end of the Second Year ; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section I.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the examination of 1890 are as follows:—

Classics.—Greek.—Euripides.—Medea.
Latin.—Horace.—Epistles, Book II. (including Ars Poetica).
Latin Prose Composition.

Mathematics.—Arithmetic.
Euclid, Books I., II., III., IV., VI. and defs. of Book V.
Algebra, to Quadratic Equations, inclusive.
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic.

English.—Spalding's History of English Literature or Lectures (see course). A paper on the essentials of English History (Buckley). Essay on a subject to be given at the time of the Examination.

With one of the following :—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—Ponsard:—l'Honneur et l'Argent. Racine :—Phèdre. CONTANSEAU : Précis de la Littérature française, from the beginning to the end of the XVIII century. Translation into French :—Rasselas. Grammatical questions.
3. *German.*—Schmidt's German Guide; Adler's Reader (selections from secs. 3 and 4) ; Translation into German.
4. *Hebrew.*—Genesis, chaps. III, IV, V, VI; Exodus, chap. XX.; Deuteronomy chap. XXXII. Exercises: — Hebrew into English, and English Hebrew. Syntax.—Reading of the Masoretic notes.

3. For the Final or B.A. Ordinary Examination the subjects are those appointed as obligatory in the Third and Fourth Years, viz.,

Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics) or Astronomy and Optics; Moral Philosophy; and those three subjects which the Candidate may have selected for himself in the Third and Fourth Years. (See § III.)

The subjects in detail for 1890 are as follows:—

1. *Greek.*—Æschines, Contra Ctesiphontem. Æschylus, Prometheus Vinctus; Greek History:—From the close of the Peloponnesian war to the death of Philip. (Or Latin, as follows):—
2. *Latin.*—Tacitus, Annals, Book II; Roman History (The twelve Cæsars.) Juvenal, Satt. VIII. and XIII.

Mathematical Physics.

1. Mechanics and Hydrostatics, as in Galbraith & Haughton's text-books; or
2. Optics and Astronomy, " "

Mental and Moral Philosophy.

Calderwood's Handbook of Moral Philosophy (omitting the Historical Sketch pp. 43-76), and Rogers' Manual of Political Economy.

*Lectures, with any two of the books prescribed for Part I. of the Honour work of the Fourth Year.

Natural Science.

Mineralogy and Geology, as in Dana's Manual and Dawson's Lecture Notes.

*Geology of Canada and Palæontology, or Practical Chemistry, as in § XII.

Experimental Physics.

Light and Heat, (see Courses of Lectures § XII).

History.

Myers:—Mediæval and Modern History; Bryce's Holy Roman Empire (omit Chaps. 6, 8, 9, 13, and Supplementary Chapter).

*Additional Course as in XII.

French.

The Course of French for the Fourth Year.

*The subjects of the Additional Course as in § IX.

German.

The Course of German for Fourth Year.

*Additional Course as in § XII.

Hebrew (Theological Students):

Isaiah 1, 7, 53, 55.

Psalms 1 to 10.

Gesenius' Grammar, Harper's Elements of Syntax, Reading of the Masoretic notes.

*Additional Courses (See § III).

For details of each subject, see Courses of Lecture, § XII.

At the B.A. Ordinary Examination, of those Candidates who obtain the required aggregate of marks, only those who pass in the First Class in three of the departments, and not less than Second Class in the remainder, shall be entitled to be placed in the First Class for the Ordinary Degree.

4. Every Candidate for the Degree of B.A. is required to make and sign the following declaration :—

"Ego———polliceor sancteque recipio me, pro meis viribus, studiosum fore communis hujus Universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam."

II. FOR THE DEGREE OF M.A.

1. A candidate must be a Bachelor of Arts of at least three years standing.

Thesis.

2. He is required to prepare and submit to the Faculty a thesis on some literary or scientific subject, under the following rules :—

a. The subject of the thesis must be submitted to the Faculty before the thesis is presented.

b. A paper read previously to any association or published in any way cannot be accepted as a thesis.

c. The thesis becomes the property of the University, and cannot be published without the consent of the Faculty of Arts.

d. The thesis must be submitted before some date to be fixed annually by the Faculty, not less than two months before proceeding to the Degree.

The last day in the session of 1889-90 *for sending in Thesis for M.A. will be Jan.* 31*st*, 1890.

Examination.

3. All candidates, except those who have taken First Rank B.A. Honours (or Second Rank B.A. Honours in or after 1889), or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each candidate may select.

(*a*) The subjects of the Examination in *Literature* are divided into two groups as follows :—

Group A.—1. Latin, 2. Greek. 3. Hebrew.

Group B.—1. French. 2. German. 3. English.

(*b*) The subjects for the Examination in *Science* are divided into three groups:—

Group A.—1. Pure Mathematics (Advanced or Ordinary). 2. Mechanics (including Hydrostatics). 3. Astronomy. 4. Optics.

Group B.—1. Geology and Mineralogy. 2. Botany. 3. Zoology. 4. Chemistry.

Group C.—1. Mental Philosophy. 2. Moral Philosophy. 3. Logic. 4. History of Philosophy.

(*c*) Every Candidate in Literature is required to select two subjects out of one group in the Literary section, and one out of the other group in the same section for the Examination. Every Candidate in Science is required to select two out of the three groups in the Scientific section; and in one of the groups so chosen to select two subjects, and in the other group one subject for Examination.

(*d*) One of the subjects selected as above will be considered the principal subject (being so denoted by the candidate at the time of application), and the other two as subordinate subjects.

For further details of the Examination application must be made to the Faculty before the above date. For fees see § XI.

III. FOR THE DEGREE OF LL. D.

Candidates must be Masters of Arts of at least twelve years standing. Every Candidate for the Degree of LL.D. in course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a Thesis on some Literary or Scientific *subject previously approved* by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

N.B.—The subject should be submitted before the Thesis is written.

Every Candidate for the degree of LL.D in Course is required to submit to the Faculty of Arts, with his Thesis, a list of books, treating of some one branch of Literature or of Science, satisfactory

to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty. For fees see § XI.

§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

The Honour lectures are open to Undergraduates only, and no Undergraduate is permitted to attend unless (*a*) He has been placed in the First Class in the subject at the preceding Sessional Examination, if there be one, and has (*b*) satisfied the Professor that he is otherwise qualified.

(*c*) While attending lectures his progress must be satisfactory to the Professor. If not satisfactory, he may be notified by the Faculty to discontinue attendance.

I. Candidates for Honours in the Second Year.

Candidates for Honours in the second year who have obtained Honours in the First Year may omit the lectures and examinations either in Modern Languages (or Hebrew) or Botany, giving notice of the subject at the beginning of the session.

II. Candidates for Honours in the Third Year.

Every Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Examinations of the Second Year have taken First Rank Honours if Honours be offered in the subject, or, if not, First Class at the Ordinary Sessional Examinations in the subject in which he proposes to compete for Honours, and be higher than Third Class in the majority of the remaining subjects ; such Candidates shall be entitled n the Third Year to exemption from lectures and examinations in any one of the subjects required by the general rule (see § III.), except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary undergraduates.

III. Candidates for B.A. Honours.

A Student who has taken Honours of the first rank in the Third Year, and desires to be a Candidate for B.A. Honours, shall be required to attend two only of the courses of lectures given in the ordinary departments, and to pass the two corresponding examinations only at the ordinary B.A. Examination. Candidates, however, who at the B.A. Examinations obtain Third Rank Honours, will not be allowed credit for these exemptions at the end of the Session, unless the Examiners certify that the knowledge shown of the whole Honour Course (Part II. as well as Part I.), is sufficient to justify it. A Student who has taken Second Rank Honours in the Third Year, and desires to be a Candidate for B.A. Honours in the same subject, shall be allowed to continue in the Fourth Year the study of the same

departments that he has taken in the Third Year, but shall be required to take the same number of subjects as in the Ordinary Course.

NOTE.—For subjects of Ordinary Course see §III.

IV. Professional Students.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, Medicine or Applied Science of the University, or in any affiliated Theological College, are entitled to exemption from any one of the Ordinary subjects required in the Third and Fourth Years. (For rule concerning "Special Certificates" see § VI.)

To be allowed these privileges in either year they must give notice at the commencement of the Session to the Dean of the Faculty of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

V. Students of the University attending Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College which any such Students may attend, as to:—(1) their conduct and attendance on the classes of the Faculty; and (2) their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Undergraduates are allowed no exemptions in the course for the degree of B.A. until they have passed the Intermediate Examination; but they may take Hebrew in the First or Second Years, instead of French and German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

* Any Student who, under any of the above rules, desires to take Experimental Physics, is required to take Mechanics and Hydrostatics also, in the Third Year.

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§ VI. MEDALS, HONOURS, PRIZES, AND CLASSING.

1. Gold Medals will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners:

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespeare Gold Medal* for the English Language, Literature and History.
The *Logan Gold Medal*, for Geology and other Natural Sciences.
Major Hiram Mills Gold Medal, for a subject to be chosen by the Faculty from year to year.

If there be no Candidate for any Medal, or if none of the Candidates fulfils the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes on the subject for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS, of First, Second or Third Rank will be awarded to those Undergraduates who have successfully passed the Examinations in any Honour Course established by the Faculty, and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

In and after April, 1889, the Honour Examinations will each be divided into two parts, separated by an interval of a few days, under the following regulations:—

a. No candidate will be admitted to Part II. unless he has shown a thorough and accurate knowledge of the course appointed for Part I.

b. The names of the successful candidates in Part I. will be announced before Part II. begins.

c. First or Second Rank Honours will be awarded to those candidates only who are successful in Part II.

d. Third Rank Honours will be awarded to those who are successful in Part I. alone.

By an Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First Class Certificates for Grades "A. and B."

3. SPECIAL CERTIFICATES will be given to those candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination. The candidates must have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, be in the First Class in not less than half the subjects, and

have no Third Class. At this examination no candidate who has taken exemptions (see § V.) can be placed in the First Class, unless he has obtained First Class in each of the departments in which he has been examined.

4. CERTIFICATES of High General Standing will be granted to those Undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the Studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the special Certificate for B.A.

5. PRIZES OR CERTIFICATES to those Undergraduates who may have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

6. His Excellency Lord Stanley has been pleased to offer a GOLD MEDAL for the study of Modern Languages and Literature, with History, or for First Rank General Standing, as may be announced.

(*a*). The Regulations for the former are as follows :—

(1). The subjects for competition shall be French and German, together with the History part of the present Honour Course for the Shakespeare Medal.

(2). The course of study shall extend over two years, viz., the Third and Fourth Years.

(3). The successful Candidate must be capable of speaking and writing both languages correctly.

(4). There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5). The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts.

(6). Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7). Candidates desiring to enter on the Third Year of the Course, who have not obtained First Class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the course in Modern Languages, if called on to do so by the Professors.

(8). The subjects of Examination shall be those of the Honour Course in Modern Languages.

(*b*) The Regulations for the Gold Medal, if awarded for First Rank General Standing, are as follows :—

(1). The successful candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B.A. Examinations.

(2). He shall be examined in the following subjects :—

(*a*) *Classics* (both languages); *(b) Mixed Mathematics* :—*Mechanics, Hydrostatics, Optics, Astronomy ; (c) Mental and Moral Philosophy ;* and any *two* of the following subjects, or any *one* of them with its Additional Course ; *(d)* Natural Science ; *(e)* Experimental Physics ; *(f)* English and History ; *(g)* French ; *(h)* German.

(3). His answering must satisfy special conditions laid down by the Faculty.

(4). The same candidate cannot obtain the Gold Medal for First Rank General Standing, and also a Gold Medal for First Rank Honours.

7. THE NEIL STEWART PRIZE of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules :—

(1). The prize will not be given for less than a thorough examination in Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch and such poetic portions of the Scriptures as may be determined.

(2). In case competitors should fail to attain the above standard the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year :—Hebrew Grammar (Gesenius) ; Translation and analysis of the first ten chapters of Genesis ; the Prophet Habakkuk (the whole book) ; and the first ten Psalms.]

(3). There will be two Examinations of three hours each ; one in Grammar and the other in Translation and Analysis.

The Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next session.

8. EARLY ENGLISH TEXT SOCIETY'S PRIZE.—The prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :—

(1). The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2) Specimens of Early English, Clarendon Press Series, ed. Morris and Skeat,) Part II., A.D., 1298—A.D., 1393. The Lay of Havelok the Dane (Early English Text Society, ed. Skeat).

9. NEW SHAKSPERE SOCIETY'S PRIZE. This Prize, the annual gift of the New Shakspere Society open to graduates and under-

graduates, will be awarded for a critical knowledge of the following plays of Shakspere :—

Hamlet ; Macbeth ; Othello ; King Lear.

10. "CHARLES G. COSTER MEMORIAL PRIZE." This Prize, intended as a tribute to the memory of the late Rev. Charles G. Coster, M.A., Ph. D.,Principal of the Grammar School, St. John. N.B. is offered by Colin H. Livingstone, Esq., B.A., to the Undergraduates, (men or women) from the Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island. In April, 1889, it has not been restricted to any Academic year, but in April, 1890, it will be awarded to that undergraduate of the First Year, from the above Provinces, who in the opinion of the Faculty has passed the most satisfactory Sessional Examinations.

11. The names of those who have taken Honours, Certificates or Prizes will be published in order of merit ; with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

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§ VII. LICENSED BOARDING HOUSES.

Regulations for Students in Arts passed by the Corporation, April, 1875.

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep boarding-houses shall produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the Students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or disorderly conduct.

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§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct :—

1. A Class-book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of a lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the class-room. In the case last mentioned the student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline, after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the student, and, if necessary, report him to the Dean.

5. Every student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain, without as well as within the walls of the College, a good moral character.

6. When students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes or honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar.

8. Any student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

[NOTE.—All students are required to appear in Academic dress while in or about the College building. Students are requested to take notice that petitions to the Faculty on any subject cannot, in general, be taken into consideration, except at the regular meetings, appointed in the Calendar.]

§ IX. LIBRARY.

Extract from the Regulations.

1. The books in the Library are classed in two divisions:—1st, Those which

may be lent; and 2nd, those which may not, under any circumstances, be removed from the Library. The classification shall be determined by the Librarian.

2. Students in the Faculty of Arts or of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the Session on the certificate of the Librarian or his assistant that the books have been returned uninjured.

3. Students may borrow not more than three volumes at one time, except on the recommendation in writing of a Professor for specified books, and must return them within two weeks, on penalty of a fine of 5 cents a volume for each day of detention. An additional deposit of $4 entitles a student to borrow two extra volumes.

4. A student incurring fines beyond the sum-total of $1 shall be debarred the use of the Library until they have been paid.

5. Any volume, or volumes, lost or damaged by any person, shall be replaced or paid for at such rates as the Library Committee may direct; and such rate of payment shall be determined by the value of the book itself, or of the set to which the volume belongs.

6. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as students; but they are not required to pay the annual Library fee.

7. Graduates residing beyond the City limits, and applying for the loan of books from the Library, shall not receive such books without the sanction of the Honorary Librarian, and depositing the value of the books with the Bursar of the College.

8. Members of the McGill College Book Club, on presenting annually a certificate of their membership, are by a special regulation of Corporation entitled to the use of the Library on the same conditions as Graduates, but they are not required to make a deposit.

9. Students in the Faculties of Law and Medicine, who have paid the Library fee to the Bursar, may read in the Library, and, on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian or his assistant.

10. Persons not connected with the College may consult Books in the Library on obtaining an order from any of the Governors, or from the Principal, or the Dean of the Faculty of Arts or of Applied Science, or from any of the Professors in the said Faculties. Donors of books or money to the amount of Fifty dollars may at any time consult books on application to the Librarian.

11. The Library is kept open from 9 a.m. to 4 p.m. daily, and no person shall be allowed in the Library except during these hours.

12. No person, other than the Librarian and the assistants, is allowed to enter the alcoves, or to take down books from the shelves, except members of

Corporation, and Professors, or those whom any of the above may accompany personally.

13. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Library Assistant who will thereupon procure him the book.

14 Readers must return the books they have obtained to the Library Assistant before leaving the Library.

15. No conversation is permitted in the Library.

§ X. PETER REDPATH MUSEUM.

1. The Museum will be open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.

2. Students will obtain tickets of admission from the Principal on application.

3. Students will enter by the front door only, except when going to lectures.

4. Any Student wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the Session.

§ XI. FEES.

All fees and fines are payable to the Bursar of the College.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)	$4.00
For the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination)	6.00
Sessional Fee	20.00
Library Fee	4.00
Gymnasium Fee	2.50
Undergraduates are required to pay all the above fees.	
Fee for a certificate of standing, if granted to a Student on application	1.00
Fee for a certificate of standing, if accompanied by a statement of classification in the several subjects of examination	2.00
Examination fee for Students of Affiliated Theological College who present themselves for the entrance examination without intending to become undergraduates	10.00

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Course which they attend, or $20 for all the courses.

Occasional students taking one course of Lectures only are required to pay $5 per Session for that course.

Occasional students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

N.B.—The lectures in one subject in any one of the four College Years constitute a "Course."

The Matriculation, Library and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend, without payment of fees, all lectures except those noted as requiring a special fee.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines are applied to the purchase of books for the Library.]

Fee for the Degree of B.A.	$ 5 00
" " " *M.A.*	10 00*
" " " *LL.D.*	50 00*

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is.....$25.00.

The B.A. fee must be paid before the Examination.

The M.A. or LL.D. fee must be sent with the Thesis to the Secretary of the University. This is a condition essential to the reception of the application. The Secretary will then forward the Thesis to the Dean of the Faculty.

* A Bachelor of Arts or Master of Arts, intending to proceed to a higher Degree, is required, *in addition* to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University (which payment suffices also for Registration under Chap. III. of the Statutes of the University). He may, if he prefer it, compound for the above annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the of date of application for the Degree.

§ XII. COURSES OF LECTURES.

1. ORDINARY COURSE.

I. CLASSICAL LITERATURE AND HISTORY.

(Major H. Mills Professorship of Classics.)

Professor, Rev. G. Cornish, M. A., LL. D.

Asst. Prof., A. J. Eaton, M. A., Ph. D.

GREEK.

First Year.—Homer.—Odyssey, Books XXI.-XXIV. (Selections).

Second Year.—Euripides.—Medea.

Third Year.—Lysias.—Contra Eratosthenem. Æschylus.—Prometheus Vinctus.

Fourth Year.—Æschines.—Contra Ctesiphontem.

LATIN.

First Year.—Cicero.—Select Letters. Virgil.—Book IX. Latin Prose Composition.

Second Year.—Horace.—Epistles, Book II. Tacitus.—Germania, Chaps. I.-XXVII. Latin Prose Composition.

Third Year.—Juvenal.—Satires VIII. and XIII. Livy.—Book XXI. Latin Prose Composition.

Fourth Year.—Tacitus.—Annals, Book II. Latin Prose Composition.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages; and to Prosody and Accentuation.

An examination in Greek and Roman History will be required at the close of the First Year.

The Latin pronunciation adopted in the lectures is based on the scheme issued by the Cambridge Philological Society (London: Trubner & Co).

In Greek, the system of pronunciation, outlined in the preface of Goodwin's Greek Grammar, is recommended to the attention of Students.

Text-Books.—First Year.—Goodwin's Greek Grammar, Arnold's Latin Prose by Bradley, Cox's General History of Greece, Merivale's General History of Rome, Bender's Roman Literature.

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2. ENGLISH LANGUAGE AND LITERATURE.

(Molson Professorship.)

Professor, Chas. E. Moyse, B. A.

Lecturer, Paul T. Lafleur, M. A.

First Year.—English Language and Literature. Three lectures a week. Until Christmas the work of the class will partly consist of exercises in Analysis. Two lectures a week will be given to the study of English classics. Milton's Comus and a portion of Bacon's Essays have been selected for the

Session of 1889-90. After Christmas there will be a course of about thirty lectures on English Literature previous to the Elizabethan Period. Students are recommended to use Prof. Henry Morley's Charts of English Literature, and to read the first chapter of Henry Morley's English writers (Cassell, 1887).*

Second Year.—A period of English Literature, and one play of Shakespeare. One Lecture a week before Christmas; two Lectures a week after Christmas. During the Session of 1889-90, the leading poets of the Nineteenth Century will form the subject of the Lectures. Shakespeare—A Midsummer Night's Dream. (Clarendon Press Edition.)

Third Year.—*A.* Chaucer's Prologue to Canterbury Tales. Lecture once a week. Text-book, Chaucer's Prologue, &c., ed. Morris. *B.* Rhetoric, Lecture once a week, Text-book, Bain's Rhetoric.

Fourth Year.—History. The Lectures (once a week) will be a sketch of general European History from the fall of the Roman Empire of the West to the discovery of the New World. The use of Prof. Nicol's Tables of European History is recommended.

3. MENTAL AND MORAL PHILOSOPHY.

(John Frothingham Professorship of Mental and Moral Philosophy.)

Professor, Rev. J. Clark Murray, LL.D.

Lecturer, Paul T. Lafleur, M. A.

Second Year.—First Term.—Elementary Psychology. (Text-book;—Murray's Handbook of Psychology, Book I.) Second Term.—Logic. (Text-book:—Jevons' Elementary Lessons in Logic.)*

Third Year.—First Term:—The Logic of Induction, as in Mill's System of Logic, Book III. Second Term:—The Psychology of Cognition, as in Murray's Handbook of Psychology, Book II., Part I.

Fourth Year.—First Term.—The Psychological Basis of Ethics. Second Term—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. In the Third and Fourth Year students are also required to write occasional Essays on Philosophical subjects.

For Additional Courses, see Honour Course.

4. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. Darey, M. A, B. C. L., LL. D., Officier d'Académie,

First Year.—Darey, Principes de Grammaire française. LaFontaine, choix de fables. Molière, l'Avare. Dictation. Colloquial exercises.

Second Year.—Ponsard, l'Honneur et l'Argent.—Racine, Phèdre. Contanseau, Précis de littérature française, depuis son origine jusqu'à la fin du XVIIIe siècle. Translation into French;—Dr. Johnson, Rasselas. Dictation. Parsing. Colloquial exercises.

* The prizes are awarded on the work of the whole Session

Third Year.—Corneille, Nicomède. Cogery;—Third French course. Translation into French;—Morley, Ideal Commonwealths. Dictation. Contanseau, Précis de littérature française, depuis le XVIIIe siècle jusqu'à nos jours.

Fourth Year.—Cogery.—Third French course. Bonnefon, Les Ecrivains modernes de la France. Translation into French;—Morley, Ideal Commonwealths. French Composition. Dictation. Corneille, Nicomède.

For additional Courses see Honour Lectures.

The Lectures in the Third and Fourth Years are given in French.

5. GERMAN LANGUAGE AND LITERATURE.

Lecturer:—P. TOEWS, M. A.

First Year.—Vandersmissen's & Fraser's, German Grammar. Adler's Progressive German Reader (selections from Sections 1 and 2). Translations, oral and written. Dictation Colloquial exercises.

Second Year.—Vandersmissen's and Fraser's German Grammar. Adler's Progressive German Reader (selection from Sections 3-5). Townson, Easy German Stories .Parsing. Dictation. Colloquial exercises. Translations, oral and written.

Third Year.—Vandersmissen's and Fraser's German Grammar. Lessing, Minna von Barnhelm, Schiller, Siege of Antwerp. History of German Literature from the earliest periods to the close of the 18th century (a brief survey by the Lecturer). German Composition. Dictation.

Fourth Year.—German Grammar, and Composition. Fouqué, Undine; Schiller, Wallenstein. Outlines of German Literature. Gostwick and Harrison (Chapters 15-24).

For additional courses see Honour Lectures.

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6. HEBREW AND ORIENTAL LITERATURE.

Professor, REV. D. COUSSIRAT, B.A., B.D., Officier d'Académie.

Elementary Course.—Reading and Grammar with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of Genesis.—Text-books, Harper's Elements of Hebrew; and Introductory Hebrew Method and Manual.

Intermediate Course.—Grammar.—Dr. Harper's "Elements and Method."—Translation from Genesis, Exodus, Deuteronomy.—Exercises.—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

Advanced Course.—Gesenius' Grammar, and Harper's Elements of Syntax.—Exercises continued.—Translation. Reading of the Masoretic notes. *First Part:*—Isaiah; Psalms. *Second Part;* Job; Ecclesiastes; Jeremiah.

The course comprises Lectures on the above Language and their Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of Roots, &c., also receive due

attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

For Additional Courses see Honour Lectures.

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7. MATHEMATICS AND NATURAL PHILOSOPHY.

(Peter Redpath Professorship of Natural Philosophy).

Professor, Alexander Johnson, M.A.,LL.D.

In the ordinary work of the First Year assistance will be given by G. H. Chandler, M. A., Professor of Practical Mathematics in the Faculty of Applied Science.

First Year.--Mathematics.--Arithmetic.--Euclid, Books, 1, 2, 3, 4, 6, with definitions of Book 5 (omitting propositions 27, 28, 29 of Book 6) ; Todhunter's Edition —or Hall and Stevens' ; the latter is recommended to candidates for Honours especially. Colenso's Algebra (Part I.) to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

Second Year.—Mathematics.—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.

The course for the Intermediate University Examination consists of the Mathematics for the First two years.

Third Year.—Mathematical Physics.—Galbraith and Haughton's Mechanics,viz. *Statics,* First 3 chapters, omitting sec. 5, chapter I., and sect. 21, chapter, II ; *Dynamics*, subjects of the First 5 chapters. Galbraith and Haughton's Hydrostatics.

Additional Department.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition; First three chapters, viz., The Stars and Nebulae ; The Sun ; The Solar System). Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

Fourth Year.—Astronomy.—(*Optional*) Galbraith and Haughton's Astronomy.—The lectures on this subjects will be given before Christmas.

Third and Fourth Years.—Experimental Physics.—*Light.*—Theories.--Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarization. 2—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3.—*Electricity*—Statical and Dynamical ;--including Electro-Magnetism— Magneto-Electricity—Thermo-Electricity.— Diamagnetism — Electric Measurements—Practical Application to Telegraphy, &c. 4.—*Magnetism.* 5.—*Sound.*—Theory of Undulations—Production and Propagation of Sound—Vibration of Strings, Rods and Plates—Vibrations of Fluids —Musical Sounds. Text-book ;—Ganot's Treatise, translated by Atkinson. This course extends over two years.

The subjects for the Session 1889-90 are Light and Heat.

The lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection, including Dynamo and Gas Engine.

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8. GEOLOGY AND NATURAL HISTORY.

(LOGAN PROFESSORSHIP OF GEOLOGY.)

Professor, Sir J. Wm. DAWSON, C.M.G., LL.D., F.R.S., F.G.S.

B. J. HARRINGTON, B.A., Ph. D., F.G.S., Professor of Mineralogy.

Third Year.—Zoology and Palæontology. Elements of Animal Physiology. Classification of Animals. Characters of the Classes and orders of Animals with recent and Fossil Examples, taken as far as possible from Canadian Species. Demonstrations in the Museum. *Text-book.*—Dawson's Handbook of Zoology, with books of reference.

A prize of $20 will be given for a collection of specimens of recent or fossil animals, accurately named. The Prize Collections or duplicates of them to remain in the Museum if required. Candidates must be Students of Zoology of the previous session, and the prize will not be awarded except for a collection of sufficient merit, and belonging to some one class of recent animals or the fossils of one geological system or one definite locality.

(*Fourth Year.*) MINERALOGY AND GEOLOGY.—1. *Mineralogy and Lithology.* An elementary course, in which attention is given more particularly to such minerals and rocks as are important in Geology or useful in the Arts. 2. *Stratigraphy, Chronological Geology and Palæontology.* Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America. The lectures will be fully illustrated with specimens, and will be accompanied with demonstrations in the Museum and excursions for field work. *Text-books.*—Dana's Manuals of Mineralogy and Geology; Dawson's Lecture Notes on Geology.

Students in Natural History are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

For Additional Departments see Honour Course, II., infra.

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9. BOTANY.

Professor:—D. P. PENHALLOW, B.Sc.

Second Year.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology.

Text-books.—Gray and Bessey.

A book prize will be given by the Professor for the best collection of plants and the greatest proficiency in their determination. The collections will be returned after examination. Candidates must be Students of Botany of the previous Session.

Third Year.—ADDITIONAL COURSE. *Vegetable Histology.*—Two lectures with practical work, each week. Microscopical manipulations; Micro-Chemical reactions; general histology of Phanerogams. Microscopical Drawing.

Fourth Year.—ADDITIONAL COURSE. *Vegetable Histology.*—Two lectures with practical work, each week. A continuation of the Course in the third year, embracing a study of the structure and life history of Cryptogams. Special studies in embryology. No student will be admitted to the Course in the Fourth Year, without having followed that for the Third Year.

Text-books.—Bower and Vines' Practical Botany, Gœbel's Outlines of Classification and special Morphology.

Fee for Additional Course: $10 per session for use of instruments and reagents.

A prize will be awarded to the student showing the greatest proficiency in the work of the two years.

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10. CHEMISTRY.

(DAVID J. GREENSHIELDS PROFESSORSHIP OF CHEMISTRY AND MINERALOGY).

Professor:—B. J. HARRINGTON, B.A., PH. D.

First Year.—A course of Lectures preparatory to the course in Natural Science. The Lectures are illustrated by experiments, and treat of the Elementary Constitution of matter, the laws of Chemical Combination by weight and volume, the Atomic Theory, Quantivalence, Chemical Formulae and Equations, Chemical Attraction, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic Elements and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugars, the Vegetable Acids and Alkaloids, Alcohol, &c. During the course attention is called, as far as possible, to the relations of Chemistry to various manufacturing industries.

Students in Arts may attend the course in Practical Chemistry with the First Year in Applied Science on payment of a fee of five dollars.

Text-Book—To be announced at the beginning of the Session.

Third Year.—ADDITIONAL DEPARTMENT. (*Theoretical or Organic Chemistry*).—One Lecture a week. (*Practical Chemistry*).—Qualitative Analysis, as in Thorpe and Muir's Qualitative Chemical Analysis, two afternoons a week.

Fourth Year.—ADDITIONAL DEPARTMENT. A course of Practical Chemistry, in continuation of that of the Third Year.

NOTE.—New chemical laboratories, capable of accommodating about fifty students, have recently been erected, and afford excellent facilities for practical work.

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11. METEOROLOGY.

Superintendent of Observatory, C. H. McLEOD, MA. E.

Instructions in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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12. ELOCUTION.

Mr. JOHN ANDREW, Instructor.

Voice culture, including exercises for developing the thorax. Rush's Philosophy of the voice. Grouping of speech. Narrative reading and the reading of poetry. Biblical readings. Dramatic reading and declamation. Mr. Andrew will make arrangements for hours to suit students.

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13. GYMNASTICS.

JAMES NAISMITH, B.A., Instructor.

The classes will meet at the University gymnasium, at hours to be announced at the commencement of the Session. The Wicksteed gold, silver and bronze medals (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the graduating class, and to students who have had instruction in the gymnasium for two sessions, the gold medal to the former, the silver and bronze medals to the latter. (See Regulations appended).

II. HONOUR COURSES.

1. CLASSICS.

Third Year.—The Authors to be read in Class, and privately by the Candidate, together with the History and other subjects, are selected at the commencement of the Session, and are divided into *Part I.*, and *Part II.*, at the Honour Examination.

Fourth Year.—Part I.—(1) *Greek Authors:*—Æschylus, Prometheus Vinctus; Sophocles, Antigone; Euripides, Medea; Herodotus, Bk. IX.; Xenophon, Hellenics, Bks. I. and II.; Æschines, Contra Ctesiphontem. (2). *Latin Authors*:—Horace, Epistles, Bk. I.; Juvenal, Satires VIII. and XIII.; Persius, Satires, V. and VI.; Livy Bk. XXI.; Tacitus, Annals, Bk. II.; Cicero, De Officiis. (3) *Greek and Latin Prose Composition*:—As in Arnold's Greek Prose and Smith's Principia Latina, Part V. *Part II.*—(1.) *Greek:*—Plato Republic, Books I. and II. Arisotle, The Poetics. Herodotus, Book VIII. Thucydides, Books VI. and VII. Hesiod, Works and Days. Æschylus, Seven

against Thebes. Aristophanes, The Frogs. Pindar, Olympic Odes. Theocritus, Idylls I. to VI. Demosthenes, De Corona. (2.) *Latin.*—Livy, Books XXII. and XXIII. Tacitus, Annals, Book I. Tacitus, Histories, Book I. Virgil, Æneid, Books I. to IV. Plautus, Aulularia. Terence, Adelphi. Juvenal, Sat. X. Cicero, De Imperio Cn. Pompeii. 3. *History of Greece and Rome :—Text-Books.*—1. Grote's History of Greece. 2. Arnold's History of Rome. 3. Mommsen's History of Rome 4. Mahaffy's History of Greek Literature. 5. Cruttwell's History of Roman Literature. 6. Cruttwell and Banton's Specimens of Roman Literature. 7. Donaldson's Theatre of the Greeks.

(4). *Composition.*—1. Composition in Greek and Latin Prose. 2. General Paper on Grammar, History and Antiquities.

2. MENTAL AND MORAL PHILOSOPHY.

THIRD YEAR.

Part I.—Schwegler's History of Philosophy, Chapters 1-21 inclusive; Mill's System of Logic, Books IV. and V.; Murray's Handbook of Psychology, Book II., Parts 2 and 3; Thomson's Outlines of the Laws of Thought. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Cicero's De Finibus, Books III and IV.; Fraser's Selections from Berkeley.

FOURTH YEAR.

Part I.—Schwegler's History of Philosophy, Chapters 22-45 inclusive; Lorimer's Institutes of Law; Murray's Outline of Hamilton's Philosophy; Spencer's First Principles; Mill's System of Logic, Book V. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Aristotle's Nicomachean Ethics; Zeller's Stoics, Epicureans and Sceptics; Spinoza's Ethics; Watson's Selections from Kant; Maine's Ancient Law.

N.B.—The class essays of candidates for Honours are expected to display superior ability in the discussion of philosophical subjects.

3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

THIRD YEAR.

Part I.—Early English; Morris and Skeat, Part II., Extt. I-IX. inclusive. Spencer.—Faerie Queene, Bk. I.; Milton—Comus; Burke—Reflections on the French Revolution; Hallam—Middle Ages, chaps. 1, 3, 5. (The above mentioned portion of the Honour work constitutes the Additional Course of the Third Year).

Sweet's Anglo-Saxon Reader; Extt. IV., VIII. and XXI.: Dryden—Annus Mirabilis; Absolom and Achitophel, Part I.; the Preface to the "Fables." Macaulay—Essays on Clive, Ranke's History of the Popes, and Warren Hastings.

Part. II—Sweet's Anglo-Saxon Reader; the pieces in verse; Chaucer—Assembly of Foules (ed. Lounsbury); Sidney—An Apologie for Poetry (ed. Arber, to be obtained by post from the editor, 1 Montague Road, Edgbaston, Birmingham, price 6d.); Milton—Shorter English Poems; Areopagitica (ed. Hales); Addison—Essays on Paradise Lost and on the Imagination (Spectator); Wordsworth—Prelude (Moxon's edition); Leslie Stephen—English Thought in the Eighteenth Century, vol. II., chap. X., sections V.-X. inclusive; Macaulay, vol. I., chap. I.; History of the English People—(Reign of Eliz. and Chas. II).

FOURTH YEAR.

Part. I—Sweet's Anglo-Saxon Reader, Extt. II., XIII., XX.; Pope—Essay on Criticism, Essay on Man; Shelley—Adonais; Tennyson—In Memoriam; Buckle—History of Civ. in England, 4 chaps. (The above-mentioned portion of the Honour work constitutes the Additional Course of the Fourth Year). Early English; Morris and Skeat, Part II., Extt. X.-XX. inclusive; Shakespere—Love's Labour's Lost.—A Midsummer Night's Dream, Hamlet; Matthew Arnold—Essays in Criticism (the second).

Part. II—Portions of Beowulf (ed. Harrison and Sharp); Sweet's Second Anglo-Saxon Reader; Vespasian Hymns; Sir Thomas More—Utopia (ed. Arber); Villiers—Rehearsal (ed. Arber); Campbell—Pleasures of Hope; Tennyson—Coming of Arthur, Gareth, and Lynette, Holy Grail, Passing of Arthur; Gibbon—Decline and Fall, chaps. L., LI., LXIV., LXV. Guizot—History of Civilization in Europe; Macaulay—Vol. I., chap. 3; Freeman—Growth of the English Constitution.

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4. MATHEMATICS AND PHYSICS.

First Year.—MATHEMATICS. Hall and Stevens's Euclid, Casey's Sequel to Euclid Hall and Knight's advanced Alegbra—Todhunter's or Burnside and Ponton's Theory of Equations (selected course).

The Honour lectures in the First Year begin after Christmas. Before admission to them, candidates will be examined on the Theorems and Examples throughout Hall and Stevens' Euclid for which proofs are given; and will have their ability to solve some of the easier problems and exercises tested.

Second Year.—MATHEMATICS.—Hind's Plane and Spherical Trigonometry or Lock's Higher Trigonometry and McClelland and Preston's Spherical Trigonometry, Part I.—Salmon's Conic Sections, chapters 1, 2, 3, 5, 6, 7, and 10 to 13, inclusive—Williamson's Differential and Integral Calculus (selected course).

Third Year.—MATHEMATICAL PHYSICS. Part I.—1. Minchin's Statics, vol. I., selected chapters. 2. Williamson and Tarleton's Dynamics, chaps. 1 to 8, inclusive. Part II.—Remainder of Minchin's Statics. Vol. I., Besant's Hydro-mechanics Part I, chaps. 1, 2, 3, 7; Godfray's Astronomy; Parkinson's Optics.

B.A. HONOUR COURSE.

Part. I.—MATHEMATICAL PHYSICS.—Honour Course of the Third Year (the whole). PURE MATHEMATICS.—Williamson's Differential and Integral Calculus; Salmon's Geometry of Three Dimensions (selected course).

Part. II.—PURE MATHEMATICS.—Boole's Differential Equations (selected course). MECHANICS.—Minchin's Statics, vol. II. except chapters 14 and 18.—Williamson's and Tarleton's Dynamics (the whole, including the Dynamics both of Rigid Bodies and of a Particle).—Routh's Dynamics of a Rigid Body (for reference).—Besant's Hydro-mechanics.

PHYSICAL ASTRNOMY.—Godfray's Lunar Theory, or Cheyne's Planetary Theory; Newtoon's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of light.

ELECTRICITY AND MAGNETISM.—Ordinary Course, with Cumming's Theory of Electricity and Maxwell's Elementary Electricity.

HEAT, ACOUSTICS } As in ordinary course

Engineering students may be candidates for Honours.

COURSE FOR ANNE MOLSON MATHEMATICAL PRIZE.

1. The Mathematical Physics of the Honour Course of the Third Year; 2. Salmon Geometry of Three Dimensions (selected course). 3. Willamson's Differential and Integral Calculus (selected course).

The value of the prize is about $64. It is open for competition to students entering on the Fourth Year.

5. NATURAL HISTORY AND GEOLOGY.

THIRD YEAR.

Part I. (1) *Mineralogy.*—Crystallography. Physical properties of minerals dependent upon light, electricity, state of aggregation, etc. Chemical composition. Principles of classification. Description of species important as constituents of Rocks.

Part II. (2) *Blowpipe Analysis and Determinative Mineralogy.* (3) *Lithology.*—Classes of Rocks, Texture and Composition. Description of the more commonly occurring Rocks. (4) Directions for collection and study in the vacation.

B.A. HONOUR COURSE.

Part I. (1) *Mineralogy and Lithology.*—Description of mineral species, particular attention being called to the Economic Minerals of Canada. Calculations of mineralogical Formulæ, Quantivalent Ratios, etc. (2) *Practical*

Geology.—Including methods of observing and recording geological facts and searching for mineral deposits. Palæontology, including studies of special groups of fossils. One lecture or demonstration weekly. Dana's Manual. (Geikie's Field Geology, Nicholson's Palæontology, special Reports and Memoirs).

Part II. (3) *Lithology*.—Essential and accessory constituents of Rocks. Microscopic and macroscopic characters. Preparation of Rock-sections. Microscopic examination of Minerals and Rocks. Principles of classification. Description and determination of Rocks. (One lecture, weekly, with occasional demonstrations in the Museum or Laboratory.) (4) *Canadian Geology*.—Studies of the several Geological formations of Canada with their distribution, subdivisions and characteristic fossils. One lectur weekly, with excursions and Museum demonstrations. Reports of Geological Survey, Dawson's Acadian Geology.

Candidates for Honours will be expected to attain to such proficiency as to be able to undertake original investigations in some at least of the subjects of study.

Students in the Faculty of Applied Science may be Candidates for Honour.

ADDITIONAL DEPARTMENT.

Third Year.—Mineralogy as in Part I. above.

Fourth Year.—The Practical Geology, as in Part I. above, with Museum studies in Palæontology.

6. MODERN LANGUAGES.

(French and German, both of which must be taken)

THIRD YEAR.

Part I.—FRENCH.—LA FONTAINE, Les Fables. RACINE, Les Plaideurs PAUL ALBERT, Littérature du XVIIe siècle. Translation into French:—GOLDSMITH, the Vicar of Wakefield. CORNEILLE, Horace.

GERMAN.—Freytag, Aus dem Staat, Friedrichs des Grossen; Schiller, Wilhelm Tell. German Prose Composition, Buckheim.

(Either of the above may be taken as the Additional Course in the language to which it belongs. See § III.)

The Ordinary Courses in French and German must also be taken. See § III.

Part II.—FRENCH.—Racine:—Phèdre; Les Plaideurs. Boileau:—L'Art Poétique. Pascal:—Les Pensées. La Bruyère:—Les Caractères. Ampère:—Formation de la Langue française.

GERMAN.—Wieland.—Oberon. History of German Literature; Gostwick. and Harrison, Chaps. I.-V., IX, XIII.

FOURTH YEAR.

Part I.—FRENCH. AUG. BRACHET, Grammaire Historique. PAUL ALBERT, La Littérature française, des origines à la fin du XVIe siècle. EMILE SOUVESTRE, Un philosophe sous les toits. Translation into French:—As You Like it

GERMAN.—Lessing, Nathan der Weise. Schiller, Geschichte des dreissigjahrigen Krieges. German Prose Composition, Buckheim.

(Either of the above may be taken as the Additional Course in the language to which it belongs).

The Ordinary Courses in French and German must also be taken.

Part II.—FRENCH. Molière;—Le Misanthrope. Victor Hugo:—Hernani. La Rochefoucauld:—Les Maximes. Dr. C. Saucerotte:—L'Esprit de Montaigne. Auguste Brachet;—Grammaire Historique. Etudes des anciens textes français (Demogeot).

GERMAN.— A special study of Goethe's 'Faust' (Part I). Selections from Heine's Lyrical Poems. Behagel—Die Deutsche Sprache. Gostwick and Harrison, Chaps. XXV. XXX.

For First and Second Rank Honours the successful candidates must be capable of speaking and writing both lauguages.

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7. SEMITIC LANGUAGES.

THIRD YEAR.

Part I.—Hebrew.—Genesis (the whole Book). Isaiah, Chaps. 40-66. *Chaldee.*—Daniel. *Syriac.*—The Peshito: St. John, Chaps. 1-5. *Literature.*—Driver's "Uses of the Tenses in Hebrew."

Part II.—Hebrew.—Ecclesiastes (the whole Book). Psalms, Books 1 and 2 (1-72). *Chaldee.*—Targum of Onkelos, Genesis, Chaps. 1-10. *Syriac.*—The Peshito Romans, Chaps. 1-5. *Literature.*—Davidson's "The Hebrew Text of the Old Testament."

FOURTH YEAR.

Part I.—Hebrew.—Proverbs, chaps. 20-31. Job, chaps. 27-42. *Chaldee.*—Ezra; *Syriac.*— The Peshito: St. John, chaps. 6-15. *Literature.*—Muller's "Outlines of Hebrew Syntax."

Part II.—Hebrew.—Deuteronomy (the whole Book). Malachi (id). *Chaldee.*—Selections from the Targums of Jonathan Ben Uzziel, etc. *Syriac.*—Bar Hebræus: Selections from his Chronicles. *Literature.*—Renan's "A general History of the Semitic Languages."

Additional Department:—(*For Third and Fourth Years.*) *The Chaldee Language:*—Brown's Aramaic Method and Translation. The Chaldee portions of Scripture, Targums of Onkelos and Jonathan Ben Uzziel. *The Syriac Language:*—Grammar, Translation from the Peshito.

LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS.

SESSION OF 1889–90

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR.	9	Classics.	† Mathematics. (*b*)	Mathematics.	† Mathematics. (*b*)	Mathematics.
	10	Mathematics.	Classics.	Classics.	Classics.	Classics.
	11	English.	* French.	* French.	* French.	English.
	12	Elementary Chemistry.	* German. * Hebrew.	English.	* German. * Hebrew.	Elementary Chemistry.
SECOND YEAR.	9	* French.	Logic.	* French.	* Hebrew.	* French.
	10	Classics.	* German. Hebrew.	Logic.	Logic.	* German. † Mathematics.
	11	Mathematics.	Classics.	† Mathematics. Botany.	Classics.	Classics.
	12	† Mathematics. Botany.	* German. (*c*)	English.	* German (*c*)	
THIRD YEAR.	9	English Literature.	Classics.	† Classics. † Math. Phy.	Classics.	†Classics. † English. † Geol.
	10	German. † Math. Physics.	French. † Ment. Phil.	† Anglo-Saxon.		† Mathematical Physics.
	11	† Mental Philosophy.	Zoology.	Physics (Mathematical).	French. Theoretical.	* Syriac, etc.
	12		⁂ Physics (Experimental).	Mental Philosophy.	Chemistry.	Rhetoric.
	1		Hebrew.	Classics.	Zoology.	Physics (Mathematical).
					⁂ Physics (Experimental).	German.
					Hebrew.	
FOURTH YEAR.	9	† Math. Physics. † English.	Astronomy. (*a*)	† Classics. Geology.	Astronomy. (*a*)	† Classics.
	10	Geology.	French. † Ment. Phil.	English Literature.	† Mental Philosophy.	Geology.
	11	Classics. † Geology.	German.	Classics.	German. History.	French. † Geology. Anglo-Saxon and Early English.
	12	Moral Phil.	Moral Philosophy.		Moral Philosophy.	German. † Math. Physics.
	1		Chaldee	† Geology. † Math. Phy.	Chaldee	
			⁂ Physics (Experimental).		⁂ Physics (Experimental).	
					* Hebrew.	

(*a*) During First Term. (*b*) Second Term. (*c*) For beginners entering 2nd Year. † For Candidates for Honours.
* The Student may take at his option French or German in the first two years, or, if a Theological Student, Hebrew. ⁂ From Nov. 1st.
Classes at 1 p.m. may be changed to other hours.
Library open every day, 9 to 4. The Museum will be opened as arranged by the Professor of Natural History.
Determinative Mineralogy, Wednesday, at 2 p.m. Practical Chemistry, Monday and Thursday, at 2 p.m.

Special Course for Women.

IN THE FACULTY OF ARTS.

DONALDA ENDOWMENT.

Professors and Lecturers (as on page 17). Lady Superintendent, Miss HELEN GAIRDNER.

The classes for women under this endowment are wholly separate, except those for Candidates for Honours (including most of the additional courses in the Third and Fourth Years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

Regulations for Examinations, Exemptions, Boarding Houses, Attendance, Conduct, Library and Museum are the same as for men. Undergraduates only wear the Academic Dress.

The *Jane Redpath Exhibition* is open for competition, at entrance into the First Year, to both men and women.

The income of the *Hannah Willard Lyman Memorial Fund* will be given in prizes.

I. MATRICULATION AND ADMISSION.

Classics.—*Latin.*—Cæsar, Bell. Gall, Book I and Virgil, Æneid, Book I, lines I—300.; Latin Grammar.

Greek.—Xenophon, Anabasis, Book I. Greek Grammar.

Candidates who cannot pass in Greek may substitute an additional modern language subject to the same regulations throughout the course of four years.

Mathematics.—Arithmetic; Algebra to Simple Equations (inclusive); Euclid, Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar, *including Analysis.*—A paper on the leading events of English History. Essay on a subject to be given at the time of the Examinations.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English. Candidates unable to take French are not excluded but will be required to study German after entrance.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made through the Professor of Classics.

PARTIAL STUDENTS.—Candidates unable to pass in all the above subjects may be admitted as Partial Students, in the separate classes; if prepared to enter in three of the subjects of the ordinary course of study, they may in the First Year make good their standing as Undergraduates at the Christmas or Sessional Examinations.

OCCASIONAL STUDENTS.—Ladies desirous of taking one or two Courses of Lectures in the separate classes for women, as Occasional Students, will report their names and the classes they desire to attend to the Lady Superintendent, and may then procure tickets from the Secretary of the University.

II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

In separate classes.

First Year.—Classics; French or German; English Grammar and Literature; Pure Mathematics; Elementary Chemistry.

Second Year.—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); with any three subjects out of the two following divisions at the option of the student, provided two be selected from one division, and one from the other:—

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been previously chosen. (*b*) French or German (whichever has been taken in the first two years). (*c*) English and Rhetoric. (*d*) Mental Philosophy.

II. Science.—(*e*) Optics and Descriptive Astronomy. (*f*) † Experimental Physics, First Course. (*g*) Natural Science (Zoology).

Fourth Year.—Latin or Greek, same Language as in Third Year; Mathematical Physics (as in Third Year), or Astronomy and Optics; Moral Philosophy; with any three subjects out of the two following divisions at the option of the student, provided two be selected out of the one division, and one out of the other:—

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been taken above. (*b*) French or German, same language as in 3rd Year. (*c*) History.

II. Science.—(*d*) † Astronomy and Optics, if not chosen as above. (*e*) † Experimental Physics (Second Course). (*f*) Natural Science (Geology.)

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† Undergraduates claiming exemption (see § V.) cannot take Astronomy and Optics or Experimental Physics if they have not taken the Third Year Mathematical Physics.

Instead of two distinct subjects in one of the above divisions, the Student in either Third or Fourth Year, may select one subject only, together with an additional course in the same or any other of these subjects under the above rules (if arrangements be made by the Faculty for it), provided she has been placed in the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The additional course is intended to be more than an equivalent, in the amount of work involved, for any of the other subjects in the division.

Additional courses are provided at present in Botany and Practical Chemistry.

Gymnastics.—A class will be conducted by Miss Barnjum, which will be optional and open to Occasional Students.

Elocution.—Should students offer, a class for Reading and Elocution will be opened by Mr. Andrews.

HONOUR COURSE AND ADDITIONAL COURSE.

(*In Mixed Classes.*)

Undergraduates desirous to take one of the Honour Courses in Classics Mathematical Physics, Mental and Moral Philosophy, English Language and Literature, History, Geology and other Natural Sciences, Modern Languages, or such, portions of the Honour Courses as constitute the "Additional Courses," may in the Third and Fourth Years obtain exemptions to the same extent as those given to men, but must take the same lectures with men.

Details will be found in Section XII. of the Calendar.

III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D. conferred in the usual way, on the usual conditions ; and will be entitled to all the privileges of these degrees, except that of being elected as fellows.

IV. FEES.

Matriculation Fee for the First Year, to be paid in the Year of Entrance only $4 00

Sessional Fee 20 00

Library Fee (optional) 4 00

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation Fee, and $5 for each Course which they attend, or $20 for all the Courses.

The above Fees are to be paid to the Registrar of the University, from whom Tickets for the Library and copies of the Library Rules may be obtained.

Occasional Students.—$5 for each class.

For Gymnastics $2.50 for the session (optional.)

(Associates in Arts, who, at their special Examination, have passed in Latin, Algebra and Geometry, are not required to present themselves for the Matriculation Examination).

Exemptions from fees may be allowed to the highest pupil of the Girls' High School of Montreal, and of other Schools, on the same terms as to men.

One exemption from tuition fees is annually allowed to the pupil (boy or girl) of the Montreal High School holding an exemption from the Schools of the Protestant commissioners, Montreal, who has taken the highest marks at the A. A. Examinations, and is recommended by the Commissioners.

For time of payment and other rules regarding Fees, see § XI, *ante*.

V. LODGINGS, &c.

Women not resident in Montreal, proposing to attend the classes, and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University, at least two weeks before the opening of the session.

Students desiring information as to the above or other matters are referred to the Lady Superintendent, who will be found in her office in the rooms of the Donalda Department, every day during the session, except Saturday.

LECTURES OPEN TO OCCASIONAL STUDENTS, SESSION 1889-90.

CHEMISTRY :—*Dr. Harrington.* Tuesday and Thursday at 12.

BOTANY :—*Prof. Penhallow.* Monday at 3, Wednesday at 12.

ZOOLOGY :—*Sir Wm. Dawson.* Tuesday and Thursday, at 12 noon.

GEOLOGY :—*Sir Wm. Dawson and Dr. Harrington.* Tuesday and Thursday, at 2 p. m. Wednesday, at 10 a. m.

EXPERIMENTAL PHYSICS :—*Dr. Johnson.* Tuesday and Thursday, at 3 p. m.

PSYCHOLOGY AND LOGIC :—*Rev. Dr. Murray and Mr. Lafleur.* Tuesday and Friday, at 4 p. m., and Thursday at 12.

MENTAL PHILOSOPHY :—*Rev. Dr. Murray and Mr. Lafleur.* Monday and Wednesday, at 4 p. m.

MORAL PHILOSOPHY :—*Rev. Dr. Murray.* Tuesday and Wednesday at 12, and Friday at 11 a.m.

RHETORIC :—*Mr. Lafleur.* Wednesday, at 11 a. m.

ENGLISH:—*Prof. Moyse and Mr. Lafleur.* Language and Literature, Tuesday, Wednesday and Friday, at 4 p. m. Literature of Elizabethan and Stuart periods and Shakespeare, Wednesday and Friday, at 3 p. m. (only one lecture a week before Christmas). Chaucer—Monday at 10 a. m.

HISTORY:—*Prof. Moyse.* Thursday, at 9 a. m.

LATIN AND GREEK *:—*Rev. Dr. Cornish and Dr. Eaton.*

FRENCH *:—*Dr. Darey.*

GERMAN *:—*Mr. Toews.*

MATHEMATICS AND MATHEMATICAL PHYSICS *:—*Dr. Johnson and Prof. Chandler.*

Those Courses, in which two lectures weekly are delivered, will each amount to about 40 lectures, and the others in proportion.

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*The Lectures on these subjects extend over all the Years of the Course, and the hours will depend on the standing of Students with respect to previous preparation, as ascertained by examination.

FACULTY OF ARTS.

*Ordinary Lectures in the Donalda Special Course for Women.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	12		Chemistry.		Chemistry.	
	2	Mathematics.	French.	Mathematics.	French.	Mathematics.
	3	Latin.	German.	Latin.	Latin.	German.
	4	Greek.	English.	English.	Greek.	English.
Second Year.	10	Mathematics.				
	11	Greek.		Latin.		
	12		Latin.	Botany.	Logic.	
	2				German.	
	3	Botany.	French.	English.	French.	English.
	4	German.	Logic.	Greek.		Logic.
Third Year.	10	English.			Classics.	French.
	11	French.	Rhetoric.		German.	
	12	Classics.	Zoology.	Math. Physics.	Zoology.	Math. Physics
	3	German.	Exp. Physics	English.	Exp. Physics.	
	4	Metaphysics.		Metaphysics.		
Fourth Year.	9				History.	
	10	French.	Astronomy.	Geology.	Astronomy.	French.
	11	German.	Classics.		Classics.	Moral. Phil.
	12		oral Phil.	Moral Phil.		
	2		Geology.		Geology.	German.
	3		Exp. Physics.		Exp. Physics.	

The hours for Practical Chemistry and Additional Botany will be arranged at the beginning of the Session.

* For Honour Lectures see previous table.

Faculty of Applied Science.

THE PRINCIPAL (*ex-officio*).

Professors :—HARRINGTON, BOVEY, McLEOD, CHANDLER.

Associate Professors :—DAWSON, JOHNSON, DAREY, MOYSE, PENHALLOW.

Associate Lecturers :— LAFLEUR, TOEWS.

Dean of the Faculty :—HENRY T. BOVEY, M.A.,M.INST. C.E.

Assistants : —TAYLOR, ATKINSON, HERSEY.

The Instruction in this Faculty is designed to afford a complete preliminary training, of a technical as well as theoretical nature, to such Students as are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Departments of study are established, viz. :

(1).—Civil Engineering and Surveying. (2).—Mechanical Engineering. (3).—Mining Engineering. (4).—Practical Chemistry.

Each of these extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student.

The Degrees conferred by the University upon such undergraduates of this Faculty, as shall fulfil the conditions and pass the Examinations hereinafter stated, will be in the first instance "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and, subsequently, the degrees of "Master of Engineering" or of "Master of Applied Science." (§ V.)

Examinations for Land Surveyors :—Any graduate in the

Faculty of Applied Science, in the Department of Civil Engineering and Land Surveying, may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entering the University, or in the First or Second Year of attendance.

Students in the Civil Engineering Department, who at the beginning of their Fourth Year give notice to the Faculty of their intention to prepare for the examination for Dominion Topographical Surveyors, will receive preparation for that examination, more especially in Spherical and Practical Astromomy and Geodesy, and may be exempted from the Heat and Hydraulics, or from the Designing of the Fourth Year.

Partial Students may be admitted to the lectures and examinations in the above special work.

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§I. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation must present themselves for examination on the 17th of September, 1889. They may, however, be admitted at a later period of the Session upon special application, if qualified to take their places in the classes in progress.

JUNIOR MATRICULATION. For entrance into the First Year two examinations are held;

(1) In the first week in June, when Schools may send their pupils for examination to McGill College.

N.B. Schools at a distance may send to the Secretary of the University names of Deputy Examiners, together with a list of candidates on or before May 15th, and, if approved, the examination papers will be forwarded to them.

(2) At the opening of the session, on September 17th and following days, in McGill College alone.

The subjects of examination are :—

Mathematics.—Arithmetic; Algebra, to end of Simple Equations Euclid's Elements, Books I., II., III.

English.—Dictation, Grammar [including Analysis] and Composition.

French.—Grammar to Syntax (exclusive) and easy translation.

Candidates unable to take the French examination are allowed to enter, but must take German as the Modern language of their undergraduate course.

Candidates who have passed the Associate in Arts examinations in the above subjects will be received as Matriculated Students in the First Year.

SENIOR MATRICULATION. For entrance into the Second Year only one examination is held, viz., on September 17th and following days, in McGill College. The subjects of examination are :—

Arithmetic.

Algebra.—To the end of Quadratics [as in Colenso's Algebra, Part I].

Euclid.—Books, I., II., III., IV., VI. and XI., and the definitions of Book V.

Plane Trigonometry.—Including solution of Triangles, and the use of Mathematical Tables.

Chemistry.—As in Nichol's Abridgment of Eliot and Storer's Manual

English.—Dictation, Grammar (including Analysis), Composition, and the leading facts of the History of England.

French or German.—Grammar and easy translation.

Candidates unable to pass in Chemistry may be allowed by the Faculty to enter and take the First Year lectures on Chemistry.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science may be admitted to an equivalent standing.

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§1. MEDALS, EXHIBITIONS AND PRIZES.

1. The BRITISH ASSOCIATION GOLD MEDAL AND EXHIBITION, founded by the British Association for the Advancement of Science in commemoration of the meeting held in Montreal in the year 1884.

The British Association Gold Medal for Session 1889–90 will be open for competition to Fourth Year Students of the Practical Chemistry Course. Candidates must take a first-class general standing in the Ordinary Course, and the medal will be awarded to the Student who stands first in the Advanced Course. (§IV. B.)

2. THE STANLEY SILVER MEDAL (the gift of His Excellency The Right Honourable Lord Stanley.)

The Stanley Medal for Session 1889–90 will be open for competition to Fourth Year Students of the Civil Engineering Course.

Candidates must take a first-class general standing in their Ordinary Course, and the Medal will be awarded to the Student who stands first in the Advanced Course. (§IV B.)

The following Exhibitions and Prizes will be open for competition in September, 1889 :—

3. A British Association Exhibition of $50.00 to Students entering the Fourth Year, the subjects of examination being the Theory of Structures, Mathematics and Mathematical Physics of the Ordinary Course.

4. A SCOTT EXHIBITION of $66.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, to Students entering the Third Year, the subjects of Examination being :—

[*a*] Macaulay's History of England, Vol. I., cap. I; Sir Walter Scott's Lady of the Lake. [*b*] Mathematics. [*c*] Mechanism.

5. A British Association Exhibition of $50 will be open for competition to Students entering the Second Year, the subjects of Examination being :—

(*a*) Macaulay's History of England, Vol. I., cap. I. ; Shakespeare's Tempest ; (*b*) Mathematics.

6. TWO PRIZES IN BOOKS, each of the value of $25, one presented by E. B. Greenshields, B. A., and one from the British Association Medal Fund, for the two best Summer Reports or Essays.

7. Two Prizes, one of $15 and one of $10, from the British Association Medal Fund, to Students entering the Third Year, for proficiency in levelling (running a line of levels and closing on the starting point).

8. A Prize of $25.00 for the best mechanical model, preference being given to one of original design, presented by W. E. Gower, M.Can.Soc C.E.

9. A Prize of $25.00, presented by J. H. Burland, B.A.Sc., to Students entering the Second Year, the subjects of examination being :—(*a*).—Inorganic Chemistry ; (*b*).—Elements of Organic Chemistry ; (*c*).—Practical Chemistry.

10. Prizes or certificates of merit are given to such Students as take the highest places n the Sessional and Degree Examinations.

§ III. SPECIAL PROVISIONS.

1. Partial Students may be admitted to the professional classes upon payment of special fees (§ VII.)

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Practical Science on payment of the fees for these classes.

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Students who have passed the Intermediate in Arts, with standing not lower than Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and wil be exempted from one of the Departments in the Third and Fourth Years in Arts.

5. Undergraduates in Arts of the Second and Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

6. Students who have failed in a subject in the Christmas or Sessional Examinations, and who desire to regain their standing, are required to make a written application to the Dean of the Faculty for a supplemental examination. Unless such supplemental examination is passed, students will not be allowed to proceed to any subsequent examination in that subject.

7. Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

8. Students who fail to obtain their Session, and who, in consequence, repeat the Year, will not be exempted from examination in any of those subjects in which they may have previously passed except by the express permission of the Faculty Application for such exemption must be made at the commencement of the Session,

9. A Student may obtain a certificate of standing on payment of a fee of $2.00.

10. The headquarters of the Canadian Society of Civil Engineers is at present located in Montreal. The Society holds fortnightly meetings, at which papers upon practical current engineering subjects are read and discussed. Undergraduates joining the Society as Students may take part in these meetings and acquire knowledge of the utmost importance in relation to the practical part of the profession.

§ IV. COURSES OF STUDY FOR SESSION 1889-90.

A. ORDINARY COURSES.

Civil Engineering.	Mechanical Engineering.	Mining Engineering.	Practical Chemistry.
FIRST YEAR.			
Arithmetic, Euclid.	Arithmetic, Euclid.	Arithmetic, Euclid.	Arithmetic, Euclid.
Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty.)	Descriptive Geometry. (By permission of the Faculty.)
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
SECOND YEAR.			
Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials	Mechanism.	
Surveying.	Surveying.	Surveying.	
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus.	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics. Loco. Design & Cons.	Experimental Physics.	Experimental Physics.
Zoology.	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
THIRD YEAR.			
Theory of Structures.	Theory of Structures.	Theory of Structures.	Practical Chemistry.
Materials.	Materials.	Materials.	Theoretical Chemistry.
Surveying.	Machinery & Millwork Loco. Design & Cons.	Mining.	Blowpipe Analysis.
Descriptive Geometry.	Descriptive Geometry.	Practical Chemistry.	Mineralogy.
Analytical Geometry.	Analytical Geometry.	Blowpipe Analysis.	
Calculus.	Calculus	Descriptive Geometry.	
Sphl. Trigonometry.		Analytical Geometry.	
Practical Astronomy.		Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Geology & Mineralogy.	Mechanical Work.	Geology & Mineralogy	Zoology.
Modern Languages.†	Modern Languages.†	Modern Languages.†	Modern Languages.†
FOURTH YEAR.			
Theory of Structures.	Theory of Structures.	Assaying.	Practical Chemistry.
Mathematics.	Mathematics.	Mathematics.	Theoretical Chemistry.
	Machinery & Millwork	Metallurgy.	Metallurgy.
	Metallurgy of Iron.	Geology (advanced).	Assaying.
	Loco. Design & Cons	Mineralogy advanced.	Mineralogy.
Heat & Heat-Engines.	Heat & Heat-Engines.	Heat & Heat-Engines.	Geology.
Hydraulics.	Hydraulics.	Hydraulics.	
Materials.	Materials.	Materials.	
Designs.	De signs.	Designs.	
Estimates. Spec'ns.	Estimates. Spec'ns.	Estimates. Spec'ns.	
Modern Languages.*	Modern Languages.*	Modern Languages.*	Modern Languages.*

(1) During the summer recess the Students in the 2nd, 3rd and 4th years are to employ themselves in some practical work (Mechanical Engineering students in a work-shop), and they are also to prepare a report on such work, to be handed in not later than October 1st. Credit will be given for this Report (or Essay) in the subsequent Sessional Examinations.

(2) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

† English or French or German. * Modern languages not imperative in the Fourth Year

B. ADVANCED COURSES.

1. CIVIL ENGINEERING.—The higher Mathematics and Mathematical Physics, and the higher branches of Applied Mechanics (*Strength of Materials, Theory of Structures, Heat and Heat Engines, Hydraulics*).

2. MECHANICAL ENGINEERING.—The higher Mathematics and Mathematical Physics, and the higher branches of Applied Mechanics. (*Strength of Materials, Dynamics of Machines, Heat and Heat Engines*).

3. MINING ENGINEERING.—Study of Ore-Deposits (as in Phillips). Metallurgy. Theory and practice of Metal-Mining and Ore-dressing. Special work in mineral analysis, with an Essay thereon.

4. CHEMISTRY.—Organic Chemistry, Industrial Chemistry, Mineralogy and special laboratory work with an Essay.

N.B.—A Student will not be allowed to take rank in an Advanced Course unless he has obtained a first class general standing in the Ordinary Course of the same Department.

The Advanced Courses in the Departments of Civil and Mechanical Engineering extend over two years. Students who have passed a creditable examination in the Mathematics of the Second Year, may take these Courses, and will be exempted from the Modern Languages of the the Third Year.

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§ V. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

1. CHRISTMAS AND SESSIONAL EXAMINATIONS.

There will be a Christmas Examination for Students of the First Year in all the subjects, and for Students of the Second, Third and Fourth Years in Mathematics, and in those subjects which they take in the Faculty of Arts. A Sessional Examination in all the subjects will be held at the end of the First and Second Years.

2. DEGREE EXAMINATIONS.

(*a*) There will be a Primary Examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(*b*) There will be a Final Examination for the degree of Bachelor of Applied Science at the end of the Fourth Year in all the subjects of that year.

The General Classification for the Degree Examination will be under two heads, viz. :

First, those who have satisfied the Examiners in the Advanced Courses, in order of merit.

Secondly, those who have satisfied the Examiners in the Ordinary Courses in order of merit.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science may obtain credit in either of the remaining Courses, by attending one or more subsequent Sessions, the necessary provisions for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory certificates of having been engaged during that time upon *bona fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination extending over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for Examination, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the Examination.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an Examination on the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

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§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts.

§ VII. LIBRARY AND MUSEUM.

Students in this Faculty have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

§ VIII. FEES.

In the Course of Civil Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mining Engineering.—1st Year $45; 2nd, 3rd and 4th Years $55; Library, $4. In all $49 to $59 for each Session.

In the Course of Chemistry.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4 In all $49 to $59 for each Session.

Matriculation Fee, for the First and Second Years, $5.

Fee for Degree of Bachelor of Applied Science, (including the Registration fee) —$12.50.

Fee for Degree of Master of Engineering or Master of Applied Science.—$25.

If for any Special reason the Degree of Ma.E. and M. A. Sc. be granded *in absentia* the fee will be $40.

The fees must be paid to the Secretary, and the ticket shown to the Dean within a fortnight after the commencement of attendance in each Session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty on payment of a fine of $1.

The B.A.Sc. fee must be paid before the final Examinations.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students being responsible for breakage.

Partial students may be admitted to the Professional Classes in any year, by payment of the ordinary fees for that year; or they may attend the lectures on any subject by payment of a fee of $5 for each term,* except in the case of Chemistry, for which a fee of $10 for each term is required.

Graduates in the Faculty of Applied Science may take further courses on payment of half the ordinary tuition fees.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee of $5.

Partial Students may attend the course of Instruction in Meteorology on paying a fee of $5.

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* The first term ends with the Christmas examinations, the second with the Sessional.

§ IX. COURSES OF LECTURES.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor :—HENRY T. BOVEY, M.A., M.INST.C.E.

Civil Engineering.

The course of instruction in Civil Engineering will include the following :— Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, etc.

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads :—

(*a*) The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, Strength, the Stiffness, and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures (*simple and complex*), Earthwork, Retaining Walls and Arches.

(*b*) Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes (*fixed or revolving*), Hydraulic Machines (*Pressure Engines, Vertical Water Wheels, Turbines, Centrifugal Pumps*), Pneumatics.

Heat and Heat-Engines.

The course of instruction in this Department will embrace :—The General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the production of Heat and Steam, and also :—

(*a*) The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulations of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c.

(*b*) The modes of transmission and a consideration of certain special machines.

(*c*) The construction of an Engine, under which head will be considered Rivets, Bolts, Screws, Sockets, Keys, Cylinders, Pistons, Organs of Distribution, Organs of Transmission.

(*d*) The construction of Special Machines.

Designs, Estimates, &c.

Engineering Students will also prepare designs, specifications, and estimates of such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and calculations as would be needed were the structure designed to be actually carried out.

II. MECHANICAL ENGINEERING.

Professors :— { HENRY T. BOVEY, M.A., M.I.M.E.
C. H. MCLEOD, MA. E., M.CAN.SOC.C.E.

Mechanism.

The lectures on Mechanism will treat of:—The object and structure of a machine, conversion and modification of motion, aggregation of motion, velocity ratios, linkwork, the teeth of wheels and trains of wheels, indicator diagrams and measurement of H. P., escapements, connections, various elementary combinations Shop visitation by the class.

Theory of Machines.

This Branch will comprise :—

(*a*) *The transmission of work*, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work (*by continuous rotation, oscillation, belts, water, and compressed air*).

(*b*) *The modification of Work and Stores of Energy*, embracing a study of the actual energy of moving pieces, springs and weights.

(*c*) *Governing and controlling Machines*, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(*d*) *Balancing Machinery.*

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice :—The different classes of machinery, Belts, Gearing, Forging, Hammers, the Tempering of Steel, Tools, Vice-work, Fitting and Finishing, Lathes and Lathe-work, Planing, Slotting and Shaping Machines, Boring and Drilling, Milling and Milling tools, Screw-cutting, the Slide-valve, Standard Measures, Gauging Implements, Rivetted Joints, Fastenings, Pipes and Cylinders, Journals, Bearing, Shafting, Linkwork, Pistons and Stuffing Boxes, Lubricators, Moulding and Founding.

Students before obtaining their degree in this course must present certificates of having been employed for at least eight months in Mechanical work-shops.

LOCOMOTIVE DESIGN AND CONSTRUCTION.

SECOND, THIRD AND FOURTH YEARS :—Session 1889-90.

Mr. R. Atkinson, M. CAN. SOC. C. E., of the Canadian Pacific Railway Mechanical Engineering staff, will give a course of lectures at the Canadian Pacific Works on the design and construction of Locomotives, comprising Boilers, Cylinders, Motion and Tenders, and on Machinery and Shop Appliances.

III. MINING ENGINEERING.

Professor :—B. J. HARRINGTON, B.A., PH.D.

The object of this course is to give Students a knowledge of the characters and modes of occurrence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subects taken up the following may be mentioned :—Blasting and the nature and use of different Explosives, Quarrying, Hydraulic Mining, Boring ; the Sinking, Timbering and Tubbing of Shafts; Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous Deposits or of Coal Seams, &c. During this year, also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple re-agents to detect the nature of different Minerals or Ores. On account of the small quantity of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of his subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a short course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models.

IV. DESCRIPTIVE GEOMETRY AND SURVEYING.

Professor :—C. H. MCLEOD, MA.E.

Descriptive Geometry.

SECOND YEAR.—(1).—Linear Drawing. (2),—Orthographic projection, including penetrations, developments, sections, etc.

THIRD YEAR.—(1) Orthographic projection (continued). Tangent planes and normals. Curved surfaces. Graphical determination of spherical triangles. (2).—Spherical projections, including the construction of maps. (3).—Axometric projection. Isometric projection. (4).—Shades and shadows. (5).—Mathematical perspective. Perspective of shades and shadows.

Surveying.

This course is designed to qualify the Student for admission to the practice of Provincial and Dominion Land Surveying. It also affords a practical and theoretical training in field engineering.

SECOND YEAR.—Chain Surveying, Angular Surveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y. and other forms), Sextant, Aneroid Barometer, Plane-table and other field instruments. Contour Surveying. Underground Surveying. Plotting. Practical operations in the field and Classroom. Calculating areas.

THIRD YEAR.—Topography, Review of Instruments, Methods of Setting out Work and Curves. Geodesic Levelling, Indirect and Barometic Levelling, Hydro-

graphic Surveying, Geodetic Surveying, The Astronomical Transit and Determination of time. Practical operations in the field, class-room and observatory.

NOTE.—The field work is carried out under the personal supervision of the Professor, and is as follows :—(*a*) a chain survey, (*b*) an angular survey, (*c*) a contour survey, (*d*) the location of a line of road, including preliminary surveys, ranging curves, levelling and setting out the work, (*e*) a hydrographic survey. Each student is required to make field notes, and from these to plot all plans and sections required in connection with the above.

At the close of the sessional examinations there is also an optional course for the 3rd year in astronomical observations and triangulations. The former includes latitude, longitude (by lunar culminations), azimuth and time.

FREEHAND AND MODEL DRAWING.

FIRST YEAR:—Session 1889-90.

Instruction in Freehand and Model Drawing will be given by Mr. A. T. Taylor, M.R.I.B.A.

Students in Arts may attend the classes in Freehand Drawing on payment of a fee of $1 per term.

V. CHEMISTRY AND ASSAYING.

Professor :—B.J. HARRINGTON, B.A., PH.D. (Greenshields Professor of Chemistry and Mineralogy.)

Assistant :—MILTON L. HERSEY, B. A. Sc.

A course of Lectures, illustrated by experiments, is given to all Students of the First Year in Applied Science on the Laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important non-metallic and metallic Elements and many of their Compounds, and on the elementary principles of Organic Chemistry. Students taking these lectures must also devote one afternoon a week during the first term, and two afternoons a week during the second term, to practical work in the laboratory.

In the Second and Third Years of the Mining Course, instruction will be given in Qualitative and Quantitave Analysis, and Chemistry Students of these years will attend a Course of lectures on either Theoretical or Organic Chemistry. In the Fourth Year Mining Students will devote themselves chiefly to Mineral Analysis and Assaying, while Practical Chemistry Students may substitute Organic Analysis and the preparation of Organic Compounds for these subjects.

The laboratory is open daily (Saturdays excepted) from 9 a.m. to 1 p.m., and from 2 to 5 p.m.

VI. GEOLOGY.

Professor :—SIR J.W. DAWSON, LL.D., F.R.S. (Logan Professor of Geology)

Assistant Professor :—B.J. HARRINGTON, B.A., PH. D., F.G.S.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy (Ordinary and Honour), Lithology, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special Studies in Mineralogy and Lithology, Advanced Course in General Geology and Palæontology, Geology of Canada, Practical Geology and Field-work.

NOTE.—Students in the Mining and Chemistry Courses take the Honour Mineralogy of the Third Year. Mining Students alone take all the subjects of the Fourth Year; Chemistry Students only the Mineralogy and Lithology.

VII. BOTANY.

Professor :—D. P. PENHALLOW, B.Sc.

Course.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology

VIII. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor :—G. H. CHANDLER, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science; those in Mechanics being introductory to Applied Mechanics. The subjects are as follows :—

FIRST YEAR:—(1) Euclid, six books. (2) Loci, Transversals, &c. (3) Algebra, to Progression. (4) Plane Trigonometry and the use of Mathematical Tables. (5) Elements of Solid Geometry. (6) Geometrical Conic Sections.

SECOND YEAR.—(1) Algebra continued. (2) Analytical Geometry. (3) Differential and Integral Calculus. (4) Mechanics.

THIRD YEAR.—(1 Mechanics continued. (2) Spherical Trigonometry. (3) Spherical and Practical Astronomy. (4) Revision and continuation of Analytical Geometry and Calculus, with applications to Mechanics, &c.

FOURTH YEAR.—Revision of Analytical Geometry and Calculus.

IX. EXPERIMENTAL PHYSICS.

Professor :—ALEXANDER JOHNSON, LL.D. (Peter Redpath Professor of Natural Philosophy.)

Students in this Faculty are required to take the course in Experimental Physics provided by the Faculty of Arts.

The subjects for the Session 1889-90 are Light and Heat.

X. ENGLISH LANGUAGE AND LITERATURE.

PROFESSOR :—C. E. MOYSE, B.A. (Molson Professor of English Language and Literature.)

Lecturer.—PAUL T. LAFLEUR, M.A.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

THIRD YEAR —A special course on English Composition.

XI. FRENCH OR GERMAN.

French.—Professor.— P. J. DAREY, M.A.,B.C.L.

German.—Lecturer.— P. TOEWS, M.A.

Students of this Faculty are required to take the course in one of these languages provided by the Faculty of Arts.

XII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

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§ X. TEXT BOOKS.

Applied Mechanics:—Bovey, Cotterill, *Rankine, *Collignon, *Weisbach, Reuleaux.

Hydraulics:—Merriman, *Weisbach.

Machinery, etc.:—Goodeve (new edition), *Willis, Rankine, Kennedy. *Knight, Rose, *Shelley, *Fairbairn, Unwin.

Heat and Heat Engines:—Holmes, *Jamieson, *Maxwell, Tait, Wilson, Rankine, Rigg, Marks.

Moulding and Founding:—Overman.

Materials:—Notes on Building Construction, *Gilmore, Thurston.

Descriptive Geometry:—Millar's Descriptive Geometry.

Surveying:-Gillespie's Land Surveying (new edition). *Johnson's Surveying.

Geology:—Dana's Geology; Dawson's Handbook of Zoology and Lecture Notes on Geology, *Nicholson's Palæontology, *Geological Survey Reports, *Dawson's Acadian Geology.

Mineralogy:—Dana's Manual, *Dana's Descriptive Mineralogy.

Blowpipe Analysis:—Brush's Determinative Mineralogy and Blowpipe.

Botany:—Gray and Bessey.

Chemistry:—Remsen's Compounds of Carbon, Thorpe & Muir's Qualitative Chemical Analysis, Fresenius' Manuals of Qualitative and Quantitative Analysis, *Watt's Dictionary of Chemistry,*Roscoe & Schorlemmer's Treatise on Chemistry *Miller's Elements of Chemistry.

N.B.—The Text Book on Chemistry for the First Year will be announced at the commencement of Session 1889-90.

Metallurgy:—Greenwood's Manual of Metallurgy.

Assaying:—Rickett's Notes on Assaying, Chapman's Assay Notes.

Mathematics:—Todhunter's Euclid, Colenso's Algebra (Part 1), Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Briggs's Analytic Geometry, Peck's Calculus, Goodeve's Principles of Mechanics, Chambers'Practical Mathematics, Chambers' Mathematical Tables.

* *Books of Reference.*

TABLE OF LECTURES.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	9			Mathematics.	Mathematics.	Mathematics.
	10	Mathematics.	Mathematics.			
	11	English.	French.	French.	French.	English.
	12	Chemistry.	German.	English.	German.	Chemistry.
	2		Pract. Chem. (2nd. Term).	* Freehand Drawing.		Pract. Chem.
	3		Do	Do		Do.
'Second Year.	9	French.		French.		French.
	10	Mechanism.	German.	Mechanism.	{ Theor. Chem. { Mathematics.	German.
	11	Mathematics.	Zoology.	Mathematics. Botany. †	Zoology.	Mathematics.
	12	Botany. †	Exp. Physics.		Exp. Physics.	English.
	2	Pract. Chem. Drawing.	Surveying.	Pract. Chem. ‡ Drawing.	Drawing. Pract. Chem.	Surveying.
	3	Drawing.	Drawing.	‡ Drawing.	Do	Drawing.
	4	Mech. Work Drawing.	Do	Do	Do	Metallurgy.
Third Year.	9	Mathematics.	Mathematics.	Machinery. Geology	Theory of Structures.	Mineralogy Mineralogy.
	10	Geology.	French. German. (2)	Mathematics.	French. German. (2) Theor. Chem.	Geology.
	11	Machines.	English.	German. (3)	Theory of Structures. (Advanced).	German. (3)
	12	Theory of Structures.	Exp. Physics.	German.	Exp. Physics.	
	2	Surveying. Pract. Chem.	Theory of Structures. Pract. Chem.	{ Blowpipe. { Analysis.	Pract. Chem. Surveying.	Pract. Chem. Drawing.
	3	Drawing.	Drawing.		Drawing.	Drawing.
	4	Mech. Work. Drawing.	Drawing. Mining.		Drawing.	Metallurgy.

* The Freehand Drawing Class is also held from 9 to 11 on Saturdays.

† For Practical Chemistry Students. ‡ For Mining Students.

TABLE OF LECTURES—(*Continued.*)

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
FOURTH YEAR.	9	Mathematics.	Designing. Mathematics	Designing.	Theory of Structures.	Designing.
	10	Theory of Structures.	Designing.	Do	Machines.	Designing.
	11	Machines. Geology.*	Do		Theory of Structures.	Geology.*
	12	Theory of Structures.	Do	Geology. *	Theory of Structures. (Advanced)	
	2	Pract. Chem. Assaying. Designing.	Theory of Structures. Pract. Chem.	Pract. Chem.	Pract. Chem. Assaying. Designing	Do
	3	Do	Hydraulics. (*a*) Steam. (*a*)	Do	Do	Hydraulics.(*a*) Steam.(*a*)
	4	Do	Do	Do	Do	Metallurgy

DECLARATION OF GRADUATES IN APPLIED SCIENCE.

I .... promise and solemnly declare, that I will, with my best endeavours, be careful to maintain the interests of this University, and that to the best of my ability I will promote its honour and dignity.

SPECIAL ANNOUNCEMENT.

COURSE OF LECTURES ON SANITATION. †

Through the liberality of Mr. J. H. Burland, B. A. Sc., the Faculty is enabled to announce the introduction into the curriculum of study of a course of lectures on Sanitation. A series of at least fifteen lectures will be delivered on this subject during the Session of 1889-90, by Mr. R. P. Fleming, M.Can. Soc. C.E.

The lectures will be given on Tuesday evenings, at 8 o'clock, commencing with the first Tuesday in October, and will treat of the following subjects; —

Sewer Gas (*composition and effects*), House Drainage (*outside and inside drains, their size, grade, material, laying, jointing and flushing*), Ventilation of Drains (*fresh air inlet*, &c.), Soil and Water Pipes (*material, joints, ventilation*, &c.), Fixtures, Traps, Tests (*different kinds, their merits and demerits*, &c.).

The lectures will also be illustrated by practical tests on actual drains.

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* For Mining and Chemistry Students. (*a*) Steam during first term; Hydraulics during Second term.

Field work for Students of the 2nd year on Mondays, Tuesdays, Wednesdays, Thursday and Fridays; for Students of the Third Year on Mondays, Wednesdays, Thursdays and Fridays during the months of September and October.

† This course will be compulsory for Students in the First Year of the Faculty of Applied Science.

The lectures during the Session of 1890-91 will treat of the following subjects :—

Different systems of House Drainage, Drainage and Plumbing Designs (*details of the best appliances for cleanliness and simplicity*), Flushing Tanks, Methods of examining existing systems of Drainage and of remodelling them, should they be found defective ; Practical Examinations, Apartment Ventilation, Dampness (*French drains for removal of surface water*, &c.).

Fees.—Medical and Partial Students will be admitted to the lectures on Sanitation on payment of a fee of $6.

Students in Applied Science may attend the course of lectures in Hygiene in the Medical Faculty, on payment of a fee of $6.

Faculty of Medicine.

THE PRINCIPAL (ex-officio).

Professors:

WRIGHT,	ROSS,	WILKINS,
MACCALLUM,	RODDICK,	PENHALLOW,
CRAIK,	GARDNER,	MACDONNELL,
FENWICK,	SHEPHERD,	MILLS,
GIRDWOOD,	BULLER,	CAMERON,
	STEWART.	

Dean.—R. CRAIK, M.D.
Registrar.—J. STEWART, M.D.
Librarian.—F. J. SHEPHERD, M.D.

The Fifty-Seventh Session of the Faculty will be opened on Tuesday, October 1st, 1889, by an introductory lecture at 3 p.m. The regular lectures will begin on October 2nd, at the hours specified in the time-table, and will be continued for six months.

The Medical School of McGill University was founded in 1824, as the "Medical Institution," by Drs. John Stephenson, Andrew F. Holmes, William Robertson and William Caldwell. In 1829 the Medical Institution became the Medical Faculty of McGill College. There were no Sessions during the political troubles, from 1836 to 1839, and it is owing to this gap that the present is the 57th Session of the Faculty. In reality this is the 61st Session of the School, which is the direct continuation of the Medical Institution.

The new building of the Medical Faculty, which was opened in the year 1885, is one of the most complete structures of its kind on this continent or elsewhere. It has been found admirably adapted for the fulfilment of the great aim of the Faculty—to make the teaching of the primary branches as practical and as thorough as

possible. The facilities now possessed by the Faculty for the above purpose are equal to those of the most advanced European medical schools.

Through the great liberality of Sir Donald A. Smith in founding the "Leanchoil Endowment," and of the citizens of Montreal and Medical Graduates in subscribing to the "Campbell Memorial Fund," the Faculty are enabled to conduct and maintain the teaching of the different branches in a high state of efficiency.

LABORATORIES, &c.

In addition to the laboratories and dissecting room, there are two large lecture rooms, each capable of comfortably seating 300 students, and one small demonstration room for classes of 50 and under. The space allotted to the library and museum has been largely increased. A large reading room, waiting room and cloak room, have been provided for students.

DISSECTING ROOM.

The Dissecting Room, which is situated on the second floor, is 76 feet in length and 31 feet in breadth. It is furnished with twenty tables, and is well lighted for work during the day and night. In procuring appliances for the comfort and convenience of the students, no reasonable expense has been spared.

In connection with the dissecting room, there is a "Bone room," where students have an excellent opportunity of studying osteology. There are also two distinct rooms for the demonstrators of anatomy.

PHYSIOLOGICAL LABORATORY.

The Physiological Laboratory, which is situated on the ground floor, is supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. It contains amongst other valuable instruments,—kymographs, various manometers, &c., for demonstrating blood pressure; myographs, rheocords, moist chambers, &c., and various electrical appliances for demonstrating experiments in connection with nerve and muscle; special apparatus for illustrating various points in respiration; apparatus specially suitable for demonstrating the processes of digestion,

as well as the chemical composition and nature of the secretions, and the chief constituents of the tissues and nutritive fluids. The laboratory is arranged in such a way as to permit of students assisting at, and taking part in these demonstrations. During the past session important additions have been made to the physiological laboratory.

HISTOLOGICAL LABORATORY.

The Histological Laboratory is a large, well-lighted room on the second floor. It is so arranged that over eighty students can be present at the microscopical demonstrations. For this purpose it is supplied with thirty-five microscopes, all from the well-known makers,—Zeiss, Hartnack and Leitz. From the large number of microscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are the subjects of demonstration.

PHARMACOLOGICAL LABORATORY.

The Pharmacological Laboratory is a large room situated on the ground floor, and is now furnished with the necessary appliances for the practical teaching of pharmacy. It is hoped that before another session passes away, the apparatus necessary for the demonstration of the more important actions of many drugs will be in possession of the Faculty.

CHEMICAL LABORATORY.

The Chemical Laboratory is large, lofty, and well lighted, and can accommodate comfortably 76 men at one time. Each student, when entering on this course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent-bottles, as well as a drawer and locker containing a modern set of chemical apparatus especially adapted for the work. This apparatus is provided by the Professor of Chemistry, and supplied to each student without extra charge. The student is only required to pay for apparatus broken or destroyed.

The laboratory is furnished with a large draught closet for ventilation, sulphuretted hydrogen apparatus, gas and combustion furnaces, &c., giving to the student unsurpassed advantages for acquiring a sound and practical knowledge of medical chemistry.

PATHOLOGICAL LABORATORY.

In the Pathological Laboratory accommodation will be provided for students or practitioners who desire to carry on private pathological research.

The recent additions made to the laboratory include a suite of rooms exclusively devoted to the study and culture of Bacteria, furnished with a complete outfit of the best modern apparatus for this purpose, including sterilizer, thermostat, &c., &c.

The demonstrations in Morbid Anatomy will be given in a small laboratory specially arranged for the work.

The classes in Pathological Histology will be held in the Histological Laboratory.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

I. MATRICULATION.

It is very important that intending Students should bear in mind the following :—

(1.) If residents of Ontario, and desirous of obtaining the license of that Province, they must conform to the regulations regarding the Preliminary Examination, and register before beginning their medical studies.

(2.) If residents of the Province of Quebec, and desirous of obtaining the license of that Province, they must pass the Matriculation Examination of the Quebec Medical Board before beginning their medical studies.

In the event of a resident in the Province of Quebec producing a Certificate of Matriculation from any of the other Provinces of the Dominion, he will be required to make a declaration that he had not obtained it with the object of avoiding the examination of the Quebec Medical Board.

(3.) Residents of the Maritime Provinces, Manitoba, or British Columbia may either pass the Preliminary Examination of their respective Medical Boards or the Matriculation Examination of this University.

(A).—UNIVERSITY MATRICULATION EXAMINATION.

The Preliminary Examination in General Education of the following Bodies is accepted by the University in lieu of its own Matriculation Examination:

1. The College of Physicians and Surgeons, Ontario.
2. The College of Physicians and Surgeons, Quebec.
3. The New Brunswick Medical Board.
4. The Nova Scotia Medical Board.
5. The Manitoba Medical College.

Graduates and Matriculates in Arts of all recognized Universities are exempt from matriculation. Any student who is unable to present proof of having passed any one of the above, or other equally satisfactory examination, will be required to undergo the matriculation examination either in Arts or Medicine of this University.

(1) *The matriculatiou in Arts* is held twice yearly: on the 1st of June and following days, and on the 17th of September and following days.

The subjects for examination are Classics, Mathematics and English.

Greek.—Xenophon, Anabasis, Book I.; Greek Grammar.

Latin.—Cæsar, Bell. Gall. Book I.; and Virgil, Æneid, Book I. lines 1-300; Latin Grammar.

Mathematics.—Arithmetic; Algebra, to Simple Equations (inclusive), Euclid's Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar *including* Analysis. A paper on the leading events of English History. Essay on a subject to be given at the time of the examination.

An equivalent amount of other books or other authors in Latin or Greek than those named may be accepted in the September examination, on application through the Professor of Classics.

(2) *The Medical Matriculation* Examination is the same as that required by the Medical Council of Great Britain.

Examinations in conformity therewith will be held on the last Friday and Saturday in March, and the third Friday and Saturday in September of each year. Applications may be made to Dr. Howe, the Examiner, till the evening of the previous day. The requirements of the standard for Matriculation are:—(1) English Language, including Grammar and Composition. (2) English History. (3) Modern Geography. (4) Latin, including Translation from the original and Grammar. (5) Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including simple Equations; (*c*) Geometry, including the first two books of Euclid or the subjects thereof. (6) Elementary Mechanics of Solids and Fluids, comprising the elements of Statics, Dynamics and Hydrostatics. (7) One of the following optional subjects:—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language, (*f*) Logic, (*g*) Botany, (*h*) Elementary Chemistry.

TEXT-BOOKS—Latin: Cicero, in Catilinam II.; or Virgil, Æneid, Bk. I.

GREEK.—Xenophon, Anabasis, Bk. I., or Homer's Iliad, Bk. IV.

FRENCH.—Voltaire's Charles XII., Two Books.

NATURAL PHILOSOPHY.—Ganot's Physics, the Chapters on Statics, Dynamics, Hydrostatics and Heat.

BOTANY.—Gray's "How Plants Grow."

ELEMENTARY CHEMISTRY.—Storer and Elliot's Manual.

(B).—MATRICULATION EXAMINATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

LATIN.—Cæsar's Commentaries. Bks. I., II., III., IV., V.—Virgil's Æneid, Bks. I. and II.—The Odes of Horace, Bk. III.

ENGLISH.—Sprague's "Six Selections from Washington Irving's Sketch Book."—A play of Shakespeare, viz., "Henry V." for 1888, and "Coriolanus" for 1889.

FRENCH.—Fénélon's "Aventures de Télemaque."—A French play, viz., Molière, "Le Bourgeois Gentilhomme" for 1888, and La Fontaine's "Fables," Books I., II., III., for 1889.

BELLES LETTRES AND RHETORIC.—Principles of the subject. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, of Elizabeth in England, Louis XIV. in France, and of the 18th century.

HISTORY.—Outlines of the History of Greece and Rome, with particular knowledge of England, France and Canada.

GEOGRAPHY.—A general view, with particular knowledge of England, France and North America.

ARITHMETIC.—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

ALGEBRA.—Must include Fractions and Simultaneous Equations of the First Degree.

GEOMETRY.—Euclid, Books I., II., III., IV. and VI., or the portion of Plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes of regular geometrical figures.

Optional Subjects.

GREEK.—Xenophon's Anabasis, Book I.—Homer's Iliad, Book I.

PHYSICS.—Outlines of the subject, as in Ganot's Physics, translated by Atkinson.

PHILOSOPHY.—Elements of Logic and of Moral Philosophy, as in Jevon's Logic and Calderwood's Hand-book of Moral Philosophy.

The Examinations will be held upon the 19th of September, 1889, at Quebec, and on the 9th of May, 1890, at Montreal. Applications to be made to Dr. F. W. Campbell, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text-books and percentage of marks to be obtained.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the fourth year.

(C.)—MATRICULATION EXAMINATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

Every one desirous of being registered as a Matriculated Medical Student in the Register of this College, except as hereinafter provided, must present to the Registrar, Dr. Pyne, Toronto, the official certificate of having passed the 2nd class Teachers' examination, with Latin option; whereupon he shall be entitled to be so registered, upon the payment of twenty dollars and giving proof of his identity.

Graduates in Arts, or Students having matriculated in Arts in any University in Her Majesty's Dominions, are not required to pass the Matriculation Examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications and upon paying the fee of twenty dollars.

§ II.—ENREGISTRATION.

The following are the University Regulations:—

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty.

The said Register shall be closed on the last day of October in each year. Fees are payable to the Registrar, and must be paid in advance (except under special circumstances) at the time of enregistration.

§ III.—COURSES OF LECTURES.

ANATOMY.

PROFESSOR, FRANCIS J. SHEPHERD.

Anatomy is taught in the most practical manner possible, and its relation to Medicine and Surgery fully considered. The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models and plates, and drawings on the blackboard.

Special attention is devoted to Practical Anatomy, the teaching being similar to that of the best European schools. The Dissecting Room is open from 8 a.m. to 10 p.m., the work being conducted under the constant supervision of the Professor and his staff of Demonstrators. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, &c., are frequently given. Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory a certificate is given. Prizes are awarded at the end of the Session fo the best examination on the fresh subject. Abundance of material provided.

CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

LECTURER, R. F. RUTTAN.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to members of the class to repeat experiments performed during the course, under the superintendence of the Professor or Lecturer.

PRACTICAL CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

LECTURER, R. F. RUTTAN.

The course in practical chemistry includes two hours' laboratory work three times a week for three months. The Students are instructed individually in chemical manipulations, blow-pipe analysis, and qualitative determination of the salts, acids, &c., they will require to use in practice. They are required before finishing their course to be familiar with the principles of practical Forensic and Sanitary Chemistry. Special attention is directed to instructing the Student in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticised.

PHYSIOLOGY.

PROFESSOR, T. WESLEY MILLS.

The purpose of this Course is to make Students thoroughly acquainted, as far as time permits, with modern Physiology: its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures is given, in which both the Experimental and Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, &c., every department of the subject is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the Student.

Laboratory work for Senior Students :—

(1) During the first part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, investigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room, and such as require the use of elaborate methods, apparatus, &c. There will be no extra fee for this part of the course.

HISTOLOGY.

PROFESSOR, GEO. WILKINS.

This will consist of a course of ten lectures and twenty-five weekly demonstrations with the Microscope. As the demonstrations will be chiefly relied upon for

teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

PHARMACOLOGY AND THERAPEUTICS.

PROFESSOR, JAMES STEWART.

The course on this subject comprises:

I. A description of the Pharmacology and Therapeutics of the more important medicinal agents.

II. The delivery of a weekly lecture ("Clinical Therapeutics") in the theatre of the General Hospital on some case or groups of cases well adapted for illustrating important points in both general and special Therapeutics. The material for these lectures is abundant, being obtained from both the wards and the outdoor clinics. Electro Therapeutics will also be dealt with in this part of the course.

III. The attendance during the summer session of a course on Practical Materia Medica.

MEDICINE.

PROFESSOR, GEORGE ROSS.

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to Women and Children, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates, illustrative of the Histological and Anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

CLINICAL MEDICINE.

PROFESSOR, R. L. MACDONNELL.

Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week with the 3rd year students, and three days with those of the 4th year. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given at the bedside, and special inducements are offered to every pupil to take part in the physical examination of patients. The mode of conducting investigations, the

use of the microscope, the value of the thermometer and ophthalmoscope, &c., in medical diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

SURGERY.

PROFESSOR, GEO. E. FENWICK.

The first part of this course consists of Surgical Pathology, illustrated by a large collection of preparations from the College Museum, also specimens as they are obtained from cases under observation at the Hospital, and contributed to that collection by the Hospital pathologist, and from private sources. The second part of the course is devoted to the practice of Surgery, in which attention is drawn to cases which have been observed by the class during the previous summer session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form a special department of this course, and Quain's and Maclise's plates are used in illustration.

CLINICAL SURGERY.

PROFESSOR, THOMAS G. RODDICK.

This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of surgical cases actually present in the wards of the General Hospital. The class is separated into junior and senior divisions, which are taken charge of by the Professor on alternate days, when the reports of the Clinical clerks are read and criticised, and fresh cases are examined by the senior students. The surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, &c. Major operations are performed in the theatre attached to the Hospital, which is so constructed that the most distant can obtain a fair view of the operations. All the recently invented appliances for the treatment of surgical disease have been introduced into the Hospital.

MIDWIFERY.

PROFESSOR, J. C. CAMERON.

This course will embrace: 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete set of models, illustrating deformities of the pelvis, wax preparations, bronze mechanical pelvis, &c. 2. Bedside instruction in the Montreal

Maternity, including the management and after-treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved fœtuses. 4. The Diseases of Infancy. 5. A course of individual clinical instruction at the Montreal Maternity.

GYNÆCOLOGY.

PROFESSOR, WM. GARDNER.

The course on this subject will comprise two lectures a week throughout the session. The anatomy and physiology of the parts concerned will be first discussed. Then the various methods of examination will be fully described, the necessary instruments exhibited, and their uses explained. After this, the diseases peculiar to the sex will be considered as fully as time will permit, in the following order:—Disorders of Menstruation; Leucorrhœa, its causes and treatment; Pelvic Cellulitis and Peritonitis; Lacerations of the Cervix Uteri and Perineum; Urinary and Fæcal Fistulæ; Inflammations of the Uterus; Displacements of the Uterus; Tumors of the Uterus; Diseases of the Ovaries.

The lectures will be illustrated as fully as possible by drawings and morbid specimens. The Gynæcological Clinic of the General Hospital furnishes the Professor with ample material to illustrate the subjects considered in the didactic lectures.

MEDICAL JURISPRUDENCE.

PROFESSOR, GEO. WILKINS.

This course includes Insanity, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopic tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shewn by Zeiss' Microspectroscope, so well adapted for shewing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the class.

OPHTHALMOLOGY AND OTOLOGY.

PROFESSOR, FRANK BULLER.

Will include a course of lectures on disease of the Eye and the Ear, both Didactic and Clinical. In the former, the general principles of diagnosis and treatment

will be dealt with; in the latter, cases illustrative of the typical forms of ordinary diseases of these organs will be exhibited and explained to the class, and afterwards placed under the special care of gentlemen who may show themselves competent to take charge of them. A course of Operations on the cadaver will be open to such students as may wish to avail themselves of the same.

HYGIENE.

PROFESSOR, ROBERT CRAIK.

Comprises lectures on Drinking Water and Public Water Supplies; conditions of Soil and Water as affecting health, including Drainage and the various methods for the removal of Excreta; the Atmosphere, including Heating and Ventilation; Individual Hygiene, comprising the subjects of Food and Drink; Physical Exercise and Bathing; discussion of the respective merits of the various forms of each, precautions, contra-indications, &c., Village Sanitary Associations; Mutual Protective Sanitary Associations for cities.*

BOTANY.

PROFESSOR, D. P. PENHALLOW.

The course in Botany includes General Morphology, Histology, Physiology and Classification. It is designed to give special prominence to Physiology, which will be made comparative whenever practicable. The course is illustrated by the microscope and gas microscope, and by the collection, models and apparatus in the Peter Redpath Museum.†

ZOOLOGY.

PROFESSOR, SIR WILLIAM DAWSON.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples, and by the collections in the Peter Redpath Museum. It forms a suitable preparation for collecting in any department of Canadian Zoology and Palæontology, and an introduction to Comparative Physiology. It may be taken instead of Botany, or along with it, without any additional fee.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum, and to the Museum of the Natural History Society of Montreal.

PATHOLOGY.

DEMONSTRATOR, W. G. JOHNSTON.

This Course comprises:—

1. Twenty-five lectures on General Pathology to Students of the 3rd year.

*Students may attend the Lectures on Sanitation in the Faculty of Applied Science:—Fee $6.

†Exemptions from Botany in the Matriculation, for Arts Students, do not entitle Students to exemptions in the First Year.

2. Weekly Pathological Demonstrations to Students of the third year. The gross and microscopic appearances of specimens collected during the week are demonstrated to the final classes. In addition, special demonstrations in Pathological Histology are given throughout the session.

3. Instruction in Post-Mortems. The Autopsy Room of the General Hospital is in charge of the Demonstrator. The post-mortems are performed by the students in rotation under his direction, and systematic demonstrations of post-mortem methods, including those to be followed in Medico-Legal cases, will also be given.

PRACTICAL MICROSCOPY.

This is an entirely *Optional* Course, and will be conducted by Prof. Wilkins, who will have Dr. Johnston, the Lecturer on Pathology, associated with him. It is intended especially for teaching the *technique* of Microscopy. Students will be shown how to examine blood, etc., fresh specimens and morbid products, also to cut, stain and mount specimens. For this purpose they will have furnished them both normal and diseased structures with which they will be able to secure a cabinet of at least 100 specimens. Everything except over-glasses and cabinet cases provided. Fee $12.00.

EXTRACTS FROM THE UNIVERSITY REGULATIONS WITH RESPECT TO THE COURSES OF LECTURES.

1st. Each Professor shall deliver at least five Lectures during the week, except in Medical Jurisprudence and Botany, if extended through six months, in which case three Lectures a week will suffice.

2nd. Every Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures, and every such examination shall be considered as a Lecture.

4th. A roll of the names of the Students attending such class shall be called from time to time.

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§ IV.—QUALIFICATIONS FOR THE DEGREE.

The following are Extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine :—

1st. No one entering after October 1st, 1884, will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures

for a period of at least four six months' sessions and one three months' summer session* in this University, or some other University, College or School of Medicine, approved of by this University.

2nd. Candidates for Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz.:—

Anatomy.	Of which Two Courses will be required of Six Months' duration.
Practical Anatomy.	
Physiology.	
Chemistry.	
Materia Medica and Therapeutics.	
Principles and Practice of Surgery.	
Midwifery and Diseases of Women and Children.	
Theory and Practice of Medicine.	
Clinical Medicine.	
Clinical Surgery.	
Medical Jurisprudence.	Of which One Course of Six Months, or Two Courses of Three Months will be required.
Practical Chemistry.	Of which One Course will be required of Three Months' duration.
Botany or Zoology.	
Hygiene.	
Histology.	Ten Lectures and Twenty-five Demonstrations.
General Pathology.	Twenty-five Lectures.

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted.

3rd. The Candidates must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital, or that of some other Hospital approved of by this University, and of having compounded medicines for six months.

4th. He must also give proof by ticket of having attended for at least six months the practice of the University or other Lying-in-Hospital approved of by this University, and of having attended at least six cases of labor.

5th. No one will be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

6th. Courses of less length than the above will only be received for the time over which they have extended.

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*To be taken after 3rd Winter Session.

7th. Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Chemistry, Histology and Botany in their first session, and are advised to take Physiology in addition.

8th. Candidates who fail to present themselves for or to pass in any of the subjects of the first two years, will be granted a supplemental examination at the beginning of the following session.

9th. No candidate will be permitted to proceed with the work of the final year, until he has passed all the subjects comprised in the Primary Examination.

10th. Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

A course in Practical Anatomy will be accepted as equivalent to a third course of lectures in General and Descriptive Anatomy.

11th. The requirements for the summer session, when as at present taken after the third winter session, shall be :—

(*a*) Daily Hospital attendance ;

(*b*) Maternity attendance ; and

(*c*) Any two weekly clinics, in addition to the clinics on General Medicine and Surgery.

12th. Every Candidate for the Degree must, on or before the first day of March, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty the following Certificate :—

MONTREAL, ——— 18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time) under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary.

(Signed) A. B.

13th. The trials to be undergone by the Candidate shall be such as are referred to under Section V.

14th. The following Oath or affirmation will be exacted from the Candidate before receiving his degree :—

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A——— B———, Doctoratus in Arte Medica, titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;— me in omnibus grati animi officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, none sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

15th. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination.

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§ V.—EXAMINATIONS.

Weekly examinations are held to test the progress of the Student ; and in addition two or three written examinations are given throughout the Session.

The examinations at the close of each Session are arranged as follows :—

FIRST YEAR.

Pass Examination in BOTANY and HISTOLOGY.

Sessional Examination in ANATOMY, CHEMISTRY, and PHYSIOLOGY.

A maximum of one hundred marks will be allowed for the Sessional Examination in each subject, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

SECOND YEAR.

Pass Examination in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY and PHYSIOLOGY.

Sessional Examination in PHARMACOLOGY and THERAPEUTICS.

One hundred marks will be allowed for the Sessional Examination, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

THIRD YEAR.

Pass Examination in PHARMACOLOGY and THERAPEUTICS, MEDICAL JURISPRUDENCE, HYGIENE* and PATHOLOGY.

* The examinations in Hygiene are held at the close of the summer session.

FOURTH YEAR.

Pass Examination in MEDICINE, SURGERY, OBSTETRICS, CLINICAL MEDICINE, CLINICAL SURGERY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year, and an equitable division is made between the Primary and Final branches.

With regard to the Primary Examination at the end of the second year, it remains optional with the Student whether he passes in all the branches or leaves two for the third year. In any case, Chemistry and Anatomy must be taken at the close of the second year, except it be otherwise agreed to by the Faculty.

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§ VI.—MEDALS AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the hightest aggregate number of marks for the best examinations, written and oral, in both Primary and Final branches.

The Student who gains the Holmes Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2nd. A Prize in Books awarded for the best examination, written and oral, in the Final branches. The gold medalist is not permitted to compete for this prize.

3rd. A Prize in Books awarded for the best examination, written and oral, in the Primary branches.

4th. The Sutherland Gold Medal, awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary branches.

5th. A Prize in Books for the best examination in Practical Anatomy.

6th. Prizes in Botany.

A Prize in Books for the best examination.

7th. The Clemesha Prize in Clinical Therapeutics, Books to the value of $25.00.

§ VII.—FEES.

The total collegiate fees for all students entering on and after the first of October, 1889, will be four hundred dollars, to be paid in four annual instalments of one hundred dollars each. The above sum represents the tuition for four winter and one summer session, and if the student elects to attend the two other summer sessions of his course, he can do so without further payment.

All fees are payable in advance, to the Registrar, and except by permission of the Faculty will not be received later than 1st November.

It is suggested to parents or guardians of students that the fees be transmitted direct by cheque or P. O. Order, to the Registrar, who will furnish official receipts.

§ VIII.—TEXT BOOKS.

(*Prices current in Montreal.*)

ANATOMY.—Gray, $6; Wilson, $4; Quain (Eng. Ed.), $9.75.

PRACTICAL ANATOMY.—Heath's Dissector, $4.50; Holden's Dissector, $5; and Landmark's, $1; Ellis' Demonstrations.

PHYSICS.—Balfour Stewart, $1.35.

INORGANIC CHEMISTRY.—Millar, $1; Wurtz's Elementary Chemistry, $1.

ORGANIC CHEMISTRY.—Armstrong, $1.

PRACTICAL CHEMISTRY.—Odling, $1 75; Galloway, Fresenius, $5.

PHARMACOLOGY and THERAPEUTICS.—Wood, $6; Lauder Brunton, $6; Whitla, $3.50; and Bruce, $1.50.

PHYSIOLOGY.—Huxley's *Elementary Lessons*, $1.35; Foster, $3.25; Prof. Mills Text-Book of Physiology (in the Press) and Outlines of Lectures.

PATHOLOGY.—Orth's Diagnosis in Pathology, $3.50.

HISTOLOGY.—Klein's Elements, $1.50; Schäer's Essentials of Histology, $2.25.

SURGERY.—Holme's Surgery (Eng. Ed.), $9; Erichsen, $9; Druitt, $4.25; Bryant, $6.50; Treves, $6.00.

PRACTICE OF MEDICINE.—Flint, $5.50; Roberts, $5; Bristowe, $5; DaCosta, $6; Fagge, $10; Quain's Dictionary.

FOR REFERENCE.—Pepper's System of Medicine.

CLINICAL MEDICINE.—Graham Brown's Manual of Diagnosis, $3.25; Finlayson's Clinical Manual, $2.60; Flint on Auscultation and Percussion, $1.60; and Loomis on Physical Diagnosis, $3.00.

MEDICAL JURISPRUDENCE.—Husband, $3.25; Guy and Ferrier, $3.75; Reese, $3.00.

MIDWIFERY.—Lusk, $5; Galabin, $3.

GYNÆCOLOGY.—Edis, $3; Goodell's Lessons, $4; Hart and Barbour's Manual, $7.50; Thornburn, $7.50.

HYGIENE.—Parks, $5.50; Wilson (Eng. Ed.), $3.25.

BOTANY.—Gray's Text-Book of Histology and Physiology, $2.25.

ZOOLOGY.—Sir William Dawson's Handbook of Canadian Zoology, $1.25.

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§ IX.—MUSEUM.

CURATOR, W. R. SUTHERLAND, M. D.

For the past fifty years, the rich Pathological Material furnished by the Montreal General Hospital has been collected here. The Faculty are also greatly indebted to many medical men throughout different parts of the world for important contributions to the Museum.

During the past few years, numerous and extremely important additions have been made to the Medical Museum.

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare condition as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneurism of the Vertebral, together with several of the Cerebral and Pulmonary Arteries. The most important collection probably in existence, of hearts affected with "Malignant Endocarditis," is also found. The Faculty are indebted to Prof. Osler, late of this University, for this collection.

Obstetrical Department of the Museum.

Besides the ordinary pathological preparations, dry and moist, usually found in Museums, this department contains a complete set of models of deformed pelves, a series of preparations in wax, illustrating the normal relations of the pelvic organs, the development of the Uterus and its contents during pregnancy, various abnormalities, twin pregnancy, fœtal circulation, &c., a series of colored casts of frozen sections, Tarnier's artificial pelvis, Budin's bronze mechanical pelvis, models of obstetrical instruments, &c.

Additions are being constantly made, and ere long the department will possess a complete collection of models, casts, preparations and apparatus for the practical teaching and illustration of Obstetrics.

Anatomical Museum.

In addition of the already large collection of normal and abnormal osteology, comparative and human skeletons of various classes of animals, moist preparations and frozen sections, the following preparations have been obtained during the last session :—

(1) A series of articulated skeletons of fore and hind limbs of the various domestic animals prepared by the articulator, Mr. Bailly.

(2) Numerous moist preparations presented by the Professor and Demonstrator of Anatomy.

(3) A complete set of Steger's beautiful colored casts taken from the celebrated frozen sections of Professors His and Braune of Leipsig. These preparations have been placed in the Museum, so that they can be constantly consulted by the Students.

(4) (*a*) A complete set of Steger's brain sections.

(*b*) Set of hardened brains with the various lobes, convolutions, ganglia, &c., in different colors.

(*c*) Models of the cerebro-spinal and sympathetic nervous systems.

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§ X.—LIBRARY.

The Library of the Medical Faculty now comprises upwards of ten thousand volumes, the largest special library connected with any medical school on this continent.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may obtain books on making a deposit of $5, which is refunded on returning the volumes.

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§ XI.—M'GILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A reading room has been established in connection with the Society, in which the leading English and American Medical Journals are on file.

The leading daily and weekly newspapers of the Dominion are also kept on file.

§ XII.—COST OF LIVING, &c.

This will, of course, vary with the taste and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good board may be obtained from $15 to $20 per month. A list of boarding houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

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§ XIII.—HOSPITALS.

Montreal General Hospital.

The Montreal General Hospital is the most extensive clinical field in the Dominion. A much larger number of in-door and out-door patients receive treatment there than in any other Canadian Hospital. Last year's report shows that 2,565 Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 23.6 days.

The large number of out-door patients that are treated in the Hospital—upwards of 30,000 annually—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments, which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by the Ophthalmic Surgeon after the out-door patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in the Hospital for Gynæcology and Laryngology, presided over by Specialists in these branches. Students are thus enabled to acquire special technical knowledge under skilled direction. The plan of teaching practical gynæcology for the past five years with marked success has been the limitation of the number of Students to two or three, who, in rotation, assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynæcological instruments.

Recently two additional special clinics have been instituted in connection with the Out-door Department: one for diseases of children and the other for the diseases of the nervous system.

CLINICAL CLERKS in both medical and surgical wards are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording a true *practical* training for his future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

DRESSERS are also appointed to the Surgical wards and to the Out-door Department. For these appointments, application is to be made to the Professor of Clinical Surgery, and to the Assistant Surgeons.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

Montreal Dispensary,

ST. ANTOINE STREET.

Over 12,000 patients yearly are treated at this Institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12 to 2 daily during the winter session, and from 4 to 6 p.m. during the summer session.

The Montreal Maternity.

The Faculty have great pleasure in announcing that the Corporation of the Montreal Maternity have recently made very important additions to their building, and have still further improvements in contemplation. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics. The institution is under the direct supervision of the Professor of Midwifery, who devotes much time and attention to individual instruction Students who have attended one course of lectures are furnished with cases in rotation, which they are required to report and attend till convalescence. They are advised to take their clinical midwifery as much as possible during the summer session. Though only six cases are required to qualify for the license of the Ontario and Quebec Medical Boards, twenty cases are demanded by the licensing bodies of Great Britain. A sufficient number of cases will be assigned to students who contemplate presenting themselves for British qualifications. Two resident Accoucheurs are appointed yearly from the graduating class to hold office for a period of six months each. By

an arrangement with the authorities of the Montreal General Hospital, one of the residents acts as Clinical assistant to the Gynæcologists for a period of six months, a change which has greatly enhanced the value of this appointment.

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§ XIV.—STUDENTS' APPOINTMENTS.

General Hospitcal—Five Resident Medical Officers.
Clinical Clerk, Gynæcology.
" " Laryngology.
" " Diseases of Children.
" " Dermatology.
" " Diseases of Nervous System.
University Maternity.—Two Resident Medical Officers.
Out-door Dressers.
Dressers in Eye and Ear Department.
Surgical Dressers (In-door).
Medical Clinical Clerks.
Post-mortem Clerks.
Student Demonstrators of Anatomy, 4 third-year Students.
Prosectors to Chair of Anatomy, 2.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 4.
Assistants in Practical Chemistry, 2.

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§ XV.—RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the Dean of the Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

4. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing from prizes and honors, suspend from Classes, or report to the Corporation for expulsion.

TIME TABLE—FIRST AND SECOND YEARS, 1889-90.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy Examination.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Physiology, 2nd Year.
10	* Practical Chemistry. 2nd Year. till 12 o'clock.	Practical Chemistry, Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Practical Physiology. Histology Demonstration.
11	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital. Zoology.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital. Zoology.	Out-Patients, Montreal Gen'l Hospital.
P.M. 2	Physiology Examination, 2nd Year.	Physiology. 2nd Year.	Physiology. 2nd Year.	Physiology, 1st Year.	Physiology, 1st and 2nd Years.	
3	Chemistry. Examination.	Chemistry.	Chemistry.	Chemistry.	Chemistry.	
4	Therapeutics Examination. Physiology, 1st Year.	Therapeutics. Physiology, 1st Year.	Therapeutics. Physiology, 1st Year.	Therapeutics.	Therapeutics. Histology Lectures, 1st Year.	
4 to 6		Practical Histology.		Practical Histology.		
A.M. 10 to 12	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.

N.B.—The Demonstrator's Hours in the Dissecting Room from 10–12 a.m., and from 8–10 p.m. * Until Christmas only.

TIME TABLE—THIRD AND FOURTH YEARS, 1889-90.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Midwifery.	Gynæcology.	Midwifery.	Gynæcology.	Midwifery.	
10	Surgery. Examination.	Surgery.	Surgery.	Surgery.	Surgery.	Morbid Anatomy. Demonstrations.
11	Practice of Medicine. Examination.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	
P.M. 1-2.30	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.
1		Clinic on Diseases of Children.		Clinic on Diseases of Children.		Clinic on Diseases of Children.
2					Skin Clinic.	
2.30			Neurological Clinic.			
2.30	Ophthalmic Clinic.		Ophthalmic Clinic.		Ophthalmic Clinic.	
4	Therapeutics Examination.	Therapeutics.	Therapeutics.	Therapeutics.	Therapeutics.	
4	Gynæcological Clinic.	General Pathology.	Gynæcological Clinic.	Lecture on Ophthalmology.	Gynæcological Clinic.	

Autopsies are performed at the General Hospital between 12 and 2 p.m.

Faculty of Law.

THE PRINCIPAL (Ex-officio).

Professors :—LAFLAMME.*
TRENHOLME.
WURTELE.*
RAINVILLE.*
ARCHIBALD.

Professors :—LAREAU.
HUTCHINSON.
ROBIDOUX.
DAVIDSON.
MCGOUN.

Dean of Faculty.—Professor N. W. TRENHOLME, M.A., D.C.L.

Registrar of the Faculty.—ARCH. MCGOUN, M.A., B.C.L.

Corporation Examiners for Degrees.—Professors N. W. TRENHOLME, M.A., D.C.L., and EDMOND LAREAU, D.C.L.

Matriculation Examiners of the Faculty.—Professors J. S. ARCHIBALD, M.A., D.C.L., and EDMOND LAREAU, D.C.L.

The classes in Law will begin with an opening lecture in the public Hall of the Fraser Institute, on Tuesday, the first of October, 1889.

The Supplemental and Matriculation Examinations will be held in the Faculty Rooms, Fraser Institute, on Wednesday, 25th September.

The Lectures will be delivered in the same Rooms in two terms, the first extending from Wednesday, 2nd October, 1889, to Friday, 13th December, 1889, and the second from Monday, 6th January, 1890, to Friday, 28th March, 1890. Any lectures omitted may be given between the latter date and the 10th April.

The Examinations will be held in the William Molson Hall, McGill College building, at Christmas, and at the close of the Session.

The complete course of study in this Faculty extends over three years; but it may be shortened to two years, when the student matriculates in the third year of his indentures.

Students who avail themselves of the privilege of attending two

* Professors emeriti.

years only, will, nevertheless, be required to pass an examination in the subjects comprised in the three years' course.

Matriculated students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation, for attendance on any particular series of Lectures.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY FOR 1889-90.

Civil Law :

Persons, Property, Ownership, Gifts and Wills, Substitutions, Marriage covenants — Professor ROBIDOUX.

Roman Law :

History of Roman Law; Institutes of Justinian, Bk. I., Bk. II., and Bk. III. to Title 14. — Professor HUTCHINSON.

Civil Procedure :

Code of Procedure, Arts. 483 to 899 — Professor MCGOUN.

Constitutional Law — Professor ARCHIBALD.

Civil Law :

Lease and Hire, Life Rents, Transaction, Gaming Contracts, Suretyship, Pledge — Professor LAREAU.

Commercial Law :

Merchant Shipping, Affreightment, Bills Lading, Iusurance — Professor TRENHOLME.

Commercial Law :

Bills and Notes — Professor DAVIDSON.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student may apply to the Dean of the Faculty Prof. Trenholme, Temple Building, St James St., or the Registrar Prof. McGoun, 181 St James St., for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course.

2. Candidates for Matriculation shall pass an examination, satisfactory to the Faculty of Law, in Latin, French, English, Mathematics, and Ancient and Modern History, and the books upon which such examination shall be had shall be from time to time fixed by the Faculty.

The books at present prescribed are the following:

Latin.—Virgil, Æneid, Book I.; Cicero, Orations I. and II. against Catiline Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires;" *Molière, "Le Bourgeois Gentilhomme;" †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in Composition and Grammatical Analysis, in English and French.

Mathematics.—Arithmetic; Algebra to the end of simple equations; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual), *Green's Short History of the English People; Miles' School History of Canada; † Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature; † Laharpe, Cours de Littérature; † Lefranc, Cours de Littérature.

Rhetoric.—Whately's Rhetoric; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic; † Logique de Port Royal; † Cousin, Histoires de la Philosophie; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English Students only. Those preceded by a cross are for French Students only. The remainder are for both English and French.

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a

special examination to be determined by the Faculty; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket or tickets for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of study in other Universities, for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct:—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to and from it, Students are expected to conduct themselves in the same orderly manner as in the Class rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student; and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the 10th of April following.

Unless altered by the Faculty, four professors shall deliver their courses of lectures during the first term, and three during the second term in each year. Each professor shall lecture daily during his course; but the Professors shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation; which examination shall be conducted by means of printed questions, answered by the students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year, as the case may be.

10. No Student shall be considered as having kept a Session unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall in consequence be made between the Examinations of such students and those of the Students regularly attending Lectures. No student shall pass for the degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been improved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Registrar of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate, before receiving the Degree of B.C.L., shall make the following declaration :

Ego A. B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in this Faculty are as follows :

Matriculation Fee	$ 5 00
Sessional Fee by Ordinary Students	36 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including registration as voter in election of fellows	12 50
Additional fee for Notarial Students	10 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st ; and if not so paid, the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3, Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. The Course of Lectures upon the Theory and Practice of Notarial Deeds and Proceedings is optional to candidates for the profession of law, but is compulsory upon candidates for the Notarial profession ; the latter may omit the subject of Civil Procedure.

17. Notarial students shall rank for general standing upon their examination in the notarial class, and failure to pass such examination shall have the same effect as failure in any other compulsory subject.

18. Occasional students may be admitted into said class on such terms as shall be arranged by the Faculty.

19. Every Candidate for the Degree of D.C.L. in course, under Chap. VIII., Section 4, of the Statutes of the University, shall be required to pass within four years from his graduation as B.C.L, such examination as shall be prescribed by the regulations of the Faculty of Law ; unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L., the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty ; such Thesis to contain not less than twenty-

five octavo pages of printed matter, and possessing such degree of literary and scientific merit as shall, in the opinion of the Faculty, justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the Books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library Fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the Degree of B.C.L. subsequently to October, 1873. The examination under the above rule is as follows:

(1) *International Law:*

Phillimore: Wharton, Conflict of Law; Fœlix, Droit International Privé.

(2) *Roman Law:*—

Gaii Commentarii, IV.; Pauli Sententiæ; Pomponii Fragmentum de origine juris, D. 1, 2; Novellæ Justiniani, cxxviii. cxxvii.; Ortolan, Institute de Justinien, Vol. i.; Mommsen's History of Rome.

(3) *Constiutional Law:*—

Hallam, Constitutional History of England; May, Constitutional Historys of England; Mill, Representative Government; The British North America Act, and cases thereunder.

SYLLABUS.

Monday, 16th September, 1889, meeting of Faculty of Law.
Wednesday, 25th September. Supplemental and Matriculation Examinations, 4 to 6 p.m.
Saturday, 28th September. Meeting of Faculty o Law.
Tuesday, 1st October, 1889. Opening lecture, 8 p.m.
Wednesday, 2nd October. Ordinary Lectures, First Term, begin as follows:—

8.30 a.m.	Prof. Hutchinson
4 p.m.	" Robidoux
4.45 "	" Lareau
5.30 "	" Trenholme

Extending to Friday, 13 December, 1889.

Christmas Examinations as follows:—

Wednesday, 18th Dec., 1889, 4 to 6 p.m., Prof. Hutchinson.
Thursday, 19th Dec., 1889, 4 to 6 p.m., Prof. Robidoux.
Friday, 20th Dec., 1889, 4 to 6 p.m., Prof. Lareau.
Saturday, 21st Dec., 1889, 3 to 5 p.m., Prof. Trenholme.

Monday, 6th January, 1890. Lectures, Second Term, begin, as follows :—

8.30 a.m. Prof. McGoun
4.45 p.m. " Davidson.
5.30 " " Archibald.

Extending to Friday 28th March, 1890.

Saturday, March, 1st.—Theses for degree of B.C.L.

Saturday. April, 5.—Meeting of Faculty of Law.

Sessional Examinations, as follow :—

Saturday, 12th April, 1890, 3 to 5 p.m., Prof. McGoun.

Friday, 18th, 4 to 6 p.m. Prof. Davidson.

Saturday, 19th, 3 to 5 p.m., Prof. Archibald.

Friday, 25th April. Meeting of Faculty of Law.

Saturday, 26th April, Declaration of Results of Examination.

Tuesday, 29th April, Convocation for degrees in Law.

University School Examinations.

1890.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE, AND RECOGNISED BY THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION.

FOR CERTIFICATES OF THE UNIVERSITIES AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville; and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with the names of satisfactory Deputy Examiners, and guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls, from any Canadian School.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

English Reading	30	*Marks.*
Writing	30	do
English Dictation	50	do
English Grammar including easy Analysis	50	do
Arithmetic (all the ordinary rules, including square root)	100	do
Geography (acquaintance with the maps of each of the four continents, and of British North America)	50	do
British History and *Canadian History*	50	do

The Candidates will also be examined in the Gospels, unless objection be made thereto by their parents or guardians, and creditable answering in the same will be mentioned in the Certificate.

II. OPTIONAL SUBJECTS.

Section I. Languages.

Latin :—

Cæsar.—Bell. Gall. Bk. I.
Virgil.—Æneid, Bk. I. lines 1–300.
Cicero.—In Catilinam, Oratt. I. and II.
} 150 marks.

Greek :—

Xenophon.—Anabasis, Bk. I.
Homer.—Iliad, Bk. IV.
} 150 do

French :—

Grammar, Dictation.
Darey's Lectures Françaises (selected extracts).
Re-translation, English into French.
} 120 do

German :—

Grammar. Adler's Reader, Sections I. and II. Translation from German into English.	120	do

Section 2. Mathematics, Natural Philosophy, &c.

Geometry :—

Euclid, I., II., III.....	150	do

Algebra :—

Elementary Rules, Involution, Evolution, Fractions, Simple Equations.	150	do

Plane Trigonometry.

(As in Hamblin Smith, pp. 1-100, omitting Ch. XI.).	100	do

Natural Philosophy.

Mechanics and Hydrostatics (as in any ordinary School Text Book).	100	do
Geometrical and Freehand Drawing.....	100	do

Geometrical.—Vere Foster R^1 R^2, R^3, problems 119 to 129.

Freehand.—Rules of Perspective. Drawing from the object.

Section 3. English.

The English Language.

Mason's Grammar, including derivation and omitting appendix. Trench's Study of Words.	120	do

English Literature.

English Literature, Primer by S. A. Brooke.* Shakespeare, Julius Cæsar. Scott's Lady of the Lake.	120	do

History.—(As in Primers of Greece and Rome, and either of the following, namely : Collier's Great Events, or MacLear's Old and New Testament History.

Geography.—Physical, Political and Commercial	100	do

Section 4. Natural Science, &c.

Zoology (as in Nicholson's Introductory Text-Book).....	100	do
Botany (as in Gray's "How Plants Grow").....	100	do
Geology (as in Dana's Text Book)..... ...	100	do
Chemistry (as in Remsen's Elements of Chemistry, pp. 1 to 160)	100	do
Physiology and Hygiene.....	100	do

* For 1890 only.

GENERAL REGULATIONS.

1. For the Certificate of ASSOCIATE IN ARTS, Candidates must pass in all the seven Preliminary Subjects, and also in the Optional Subjects contained in one of the three following groups :

First.—(*a*) Two Subjects of Section 1, one of them being Latin or Greek. (*b*) Geometry or Algebra of Section 2. (*c*) Two of the nine Subjects of Sections 3 and 4.

Second.—(*a*) French and German of Section 1. (*b*) Geometry or Algebra of Section 2. (*c*) Two Subjects of Section 3. (*d*) One Subject of Section 4.

Third.—(*a*) One Subject of Section 1. (*b*) Two Subjects of Section 2. (*c*) Three of the nine Subjects of Sections 3 and 4.

2. For the JUNIOR CERTIFICATE, Candidates must pass in all the seven Preliminary Subjects and also in the following Optional Subjects :

(*a*) One Subject of Section 1. (*b*) One Subject of Section 2. (*c*) One of the nine Subjects of Sections 3 and 4.

3. Candidates will not be considered as having passed in any subject, unless they have obtained at least *one-third* (and, in the case of Reading and Dictation, *two-thirds*) of the total number of marks obtainable in that subject.

4. The total number of Marks gained by every Candidate, in both the preliminary Subjects (except Reading and the Gospels) and Optional Subjects, shall be added up, and the Candidates arranged in order of merit in a printed list, at the close of the Examination ; those who are over 18 years of age on the first day of the examination being in a separate list. No marks in any subject shall be counted, unless the Candidate has gained at least the minimum number of marks required for passing in that subject. The marks in not more than three subjects of section 1, three subjects of section 2, and three subjects selected from sections 3 and 4, will be counted. Candidates taking one classical and one modern language may, instead of a third language, take an additional subject of section 4, with Geometrical or Freehand Drawing (150 marks in the aggregate). Candidates who take two modern languages may take an additional subject of section 4, with drawing as above, to be reckoned at 180 marks. Candidates taking one subject only of section 1 may take four subjects selected from sections 3 and 4.

5. Candidates who obtain at least *two-thirds* of the marks in any Optional Subject will be entitled to a Certificate of creditable answering in that Subject, provided they satisfy the conditions for either Associate in Acts or Junior Certificate.

6. Candidates who pass in the subjects of the University Matriculation Examinations may, without further examination, enter the Faculties of Arts and Applied Science.

7. Candidates who fail, or who may be prevented by illness from completing their examinations, may come up at the next examination without extra fee.

8. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

9. The examinations will begin on Monday, June 2nd, at 9 a.m.

10. Lists of the names, ages, and Optional Subjects to be taken by the candidates, together with the fee of $4 for each Candidate, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

Extracts from Darey's Lectures Françaises, for the examination of 1890.

Extracts beginning on pp. 10, 13, 15, 20, 32, 33, 37, 42, 47, 51, 56, 63, 68, 74, 76, 85, 87, 92, 94, 99, 103, 110, 118, 125, 129, 133, 144, 149, 151, 156, 158, 162, 166, 169, 176, 179, 182, 196, 215.

EXTRACT FROM THE REGULATIONS OF THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION OF THE PROVINCE OF QUEBEC.

The examination papers for the University School Examinations shall be adopted for Grade III. of the Academies. The pupils of this grade shall be examined in the preliminary subjects, and in Group A, or Group B, of the optional subjects, as follows :—

OBLIGATORY.	OPTIONAL.	
PRELIMINARY.	GROUP A.	GROUP B.
1. Reading	1. Latin	1. French.
2. Writing	2. Greek, or Botany, or Chemistry	2. Geometry.
3. Dictation	3. Geometry	3. Algebra.
4. Grammar	4. Algebra	4. Trigonometry or Drawing.
5. Arithmetic	5. Drawing	5. English Literature.
6. Geography (Elementary)	6. English Literature	6. History.
7. British and Canadian History	7. History	7. Physiology and Hygiene.
	8. French	8. Botany or Chemistry.
	9. Physiology and Hygiene	

The examination of Grade III. Academies shall be in accordance with the standard prescribed in the authorized course of study for that grade, and on passing in the same the pupils shall be recommended to the Universities for the title of Associates in Arts or for Junior Certificates.

NOTE.—No fees will be exacted for the examination of pupils of Academies under the control of the Protestant Committee, but in order to obtain the certificate from the Universities, the prescribed fees, viz.: $4.00 for A. A. certificates, and $2.00 for junior certificates, must be paid to the Secretary of the University Examiners.

The complete regulations of the Protestant Committee of the Council of Public Instruction with reference to these examinations may be obtained on application to the Rev. E. I. Rexford, Secretary, Department of Public Instruction, Quebec.

McGill Normal School.

The McGill Normal School in the city of Montreal is established chiefly for the purpose of training teachers for the Protestant population, and for all religious denominations of the Province of Quebec other than the Roman Catholic. The studies in this school are carried on chiefly in English, but French is also taught.

Government of the School.

The Corporation of McGill University is associated with the Superintendent of Public Instruction in the direction of the McGill Normal School, under the regulations of the Protestant Committee of the Council of Public Instruction, and it is authorized to appoint a standing committee consisting of five members, called "The Normal School Committee," which shall have the general supervision of the affairs of the Normal School. The following members of the Corporation of the University constitute the Committee of the Normal School for the Session of 1889–90.

NORMAL SCHOOL COMMITTEE.

Sir Wm. Dawson, C.M.G., LL.D., F.R.S., Vice-Chancellor of the University, *Chairman*.

Mr. Samuel Finley.
Mr. George Hague. } Governors of McGill College.

Rev. George Cornish, LL.D.
J. R. Dougall, M.A. } Fellows of McGill University.

W. F. Brakenridge, B.C.L., *Acting Secretary*.

OFFICERS OF INSTRUCTION.

McGill Normal School.

Sampson Paul Robins, M.A., LL.D., *Principal and Ordinary Professor of Mathematics and Lecturer on Art of Teaching and Natural Science.*

George W. Parmelee, Esq., *Ordinary Professor of English Language and Literature, and Instructor in Classics.*

Madame Sophie Cornu, *Professor of French.*

Mr. R. J. Fowler, *Instructor in Music.*

——— *Instructor in Elocution.*

Miss Green, *Instructor in Drawing.*

Miss Robins, *Assistant to the Principal.*

Mr. W. H. Smith, *Instructor in Tonic Sol-Fa.*

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Mr. Thos. B. Smiley, *Head Master of Boys' School.*

Miss Jane A. Swallow, *Head Mistress of Girls' School.*

Miss Lucy H. Derick, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1889-90.

This Institution is intended to give a thorough training to teachers, by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The thirty-fourth Session of this school will commence on the second of September, 1889, and close on the thirtieth of May, 1890, The complete course of study extends over four years, and the Students are graded as follows :—

1.—*Elementary School Class.*—Studying for the Elementary School Diploma.

2.—*Model School Class.*—Studying for the Model School Diploma.

3.—*Academy Class.*—Studying for the Academy Diploma.

All the following regulations and privileges apply to male and female students alike.

I. TERMS OF ADMISSION.

(Extracted from the Regulations of the Protestant Committee of the Council of Public Instruction.)

Any British subject who produces a certificate of good moral character from the minister of the congregation to which he belongs, and evidence to show that he has completed the sixteenth year of his age, may be admitted to examination for entrance into the Elementary School Class, or, if he has completed his seventeenth year, to the entrance examinations of the Model School Class. *(See Note a.)*

Previous to admission to the Elementary School Class, every pupil-teacher shall undergo an examination as to his sufficient knowledge of reading, writing, the rudiments of grammar in his own language, geography, and arithmetic; before admission to the Model School Class he must give proof of his knowledge of the subjects of the previous year. Except as stated below, the examination shall take place before the Principal, or before such other person as he may specially appoint for the purpose. (*See Note b.*)

All candidates who present certificates of having passed in Grade III. Model School Course, and all holders of Elementary School diplomas, shall be exempt from examination for admission to the Elementary School Class. All candidates who have passed at the A. A. examinations, taking two-thirds of the aggregate marks, and who have passed in French, and all holders of Model School diplomas, shall be exempt from examination for admission to the Model School Class. Holders of Elementary School diplomas, desiring admission to the Model School Class, shall be examined in Algebra, Geometry and French only.

Candidates shall be admitted to examination for entrance only at the times regularly appointed by the Principal of the school at the beginning of the session. Candidates exempt from examination can only be admitted during the first week of the session, except that teachers who may be actually engaged in teaching at the commencement of the session may, at the discretion of the Principal, be admitted up to but not later than the close of the Christmas vacation. No teacher-in-training so admitted later than the first of October shall share in that part of the bursary fund which is distributed at Christmas.

In exceptional cases the Principal of the Normal School may admit on trial to the classes persons whose qualifications may be insufficient for entrance. Such persons may be excluded from the school by the Principal whenever he may judge it best so to do; but none shall be permitted to enter or to remain on trial after the semi-sessional examinations.

No candidate is admitted to the Normal School until the provisions of the school laws respecting admission have been fulfilled. (*See Note c.*)

II. PRIVILEGES OF TEACHERS-IN-TRAINING.

All teachers-in-training are entitled to free tuition.

At the close of the semi-sessional examination, the sum of $400 from the bursary fund will be divided among the forty most successful pupils who do not reside at home with parents or guardians during their attendance at the school. Similarly the sum of $800 will be divided at the close of the sessional examinations. The

remainder of the bursary fund will be divided as an allowance for travelling expenses among Teachers-in-training residing in the Province of Quebec, at a distance of more than ninety miles from Montreal, in a proportion determined by the excess of distance above ninety miles, it being provided that no allowance for travelling expenses shall exceed ten dollars.

All teachers-in-training who pass the semi-sessional examinations in the Normal School with 60 per cent. of the total marks, and who have not fallen below 50 per cent. in any one of the groups of subjects, English, Mathematics, French and Miscellaneous, nor in any one of the subjects required by the Syllabus of Examination prescribed for diplomas of the grade to which they aspire, shall be entitled to continue in their classes after Christmas. Except by the special permission of the Principal, none others shall be entitled to this privilege, nor to a share in the Christmas bursary.

All teachers-in-training, who attain the standards defined above at the final examinations in the Normal Schools, shall be entitled to diplomas of the grade of the class to which they belong, and except with the concurrence of the Principal of the school and the professor of each subject in which there has been failure, none others shall receive diplomas or share in the bursary fund.

All holders of Elementary School diplomas obtained by reaching the standards defined above shall be entitled to admission to the Model School Class; none others, without the special permission of the Principal. Such holders of Elementary School diplomas, as have taken not less than 75 per cent. of the total marks, nor less than 60 per cent. of those in any subject essential to the diploma, according to the Syllabus of Examination of the Protestant Committee of the Council of Public Instruction, shall be entitled to admission among the "selected students" mentioned in the following paragraph, but others may be so admitted by the Principal. (*See Note d.*)

III. STUDENTS FOR THE ACADEMY DIPLOMA.

1. The Normal School shall bring up selected students at the end of the Model School year to the examinations for the entrance into the first year of the Faculty of Arts of the Universities. They may be examined either at the examinations for the Associate in Arts in June,

or at those for the matriculation in autumn, and shall take the full course of study in the first and second years.

2. Such students shall be enrolled in the Normal School as students of the Academy Class, and shall be under the usual pledge to teach for three years. They shall engage in the practice of teaching at such times and in such schools as may be from time to time arranged by the Principal in consistence with their college work, and shall be under the Principal and the regulations of the Normal School.

3. On report of the colleges which such students may be attending, that they have passed creditably in the Christmas and sessional examinations respectively, they shall be entitled to bursaries, not exceeding thirty dollars per session, in aid of fees and board. Such bursaries may be paid by the Normal School Committee out of any fund available for the purpose.

4. On passing the intermediate, or equivalent, examination of the Universities, such students will be entitled to receive Academy diplomas, in accordance with the regulations of the Protestant Committee of the Council of Public Instruction for such diplomas.

5. Such students may, with the advice of the Principal, attend classes at McGill or its affiliated colleges, or at Bishop's College, and the Normal School Committee shall make such arrangements as may be possible for free tuition at such colleges.

6. It shall be competent to the Principal of the Normal School to provide any tutorial assistance that may in his judgment be necessary for Academy students. Also, it shall be his duty in the case of optional studies to select for the students those required for the curriculum of the Normal School.

7. It shall be competent to students who have taken Academy diplomas as above to continue for two years longer at the University, or to return thereto after teaching for a time, in order to take the degree of Bachelor of Arts; but they shall be held bound to fulfil their engagements to teach, and they shall not be entitled to bursaries. (*See Note e.*)

Holders of Model School Diplomas of the McGill Normal School, who are certified by the Principal of the Normal School to have taken 75 per cent. of the total marks at their final examinations,

with not less than 60 per cent. of the marks in Mathematics, French, Latin and Greek respectively, shall be admitted without further examination to the first year in Arts of the McGill University; but all such Students must make good their standing in the University at the Christmas examinations.

Teachers-in-training who do not attain the standard defined above must, in order to enter the University, pass the usual examination for Matriculation.

Exemption from the payment of fees in McGill College for the first year will be granted to the three holders of Model School Diplomas, not being resident in Montreal, who, of all those entering the University on the conditions stated above, have gained the highest aggregate of marks at their final examinations in the Normal School, as certified by the Principal of the Normal School.

Exemptions from fees in the second year will be granted to the three students entering from the Normal School who, with creditable standing in all their examinations at the close of the first year in Arts, have taken the highest aggregate of marks of any Normal School Students of their year.

IV. CONDITIONS OF CONTINUANCE IN THE NORMAL SCHOOL.

Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled. (*See Note c.*)

Each professor shall have the power of excluding from his lectures any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations, until the matter can be reported to the Principal.

V. ATTENDANCE ON RELIGIOUS INSTRUCTION.

Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church at least once every Sunday.

VI. BOARDING HOUSES.

1. The teachers-in-training shall state the place of their residence; and those who cannot reside with their parents will be permitted to live in boarding houses, but in such only as shall be specially approved of. No boarding houses having permission to board male teachers-in-training will be permitted to receive female teachers-in-training as boarders, and *vice versa*. (*See Note g.*)

2. They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

3. They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

4. A copy of the regulations shall be sent to all keepers of lodging-houses at the beginning of the session.

5. In case of lodgings being chosen by parents or guardians, a written statement of the parent or guardian shall be presented to the Principal.

6. All intended changes of lodgings shall be made known beforehand to the Principal or to one of the professors.

7. Boarding-houses shall be visited monthly by a committee of professors.

8. Special visitations shall be made in case of sickness being reported, either by professors or by ladies connected with the school; and, if necessary, medical attendance shall be procured.

9. Students and lodging-house keepers are required to report, as soon as possible, all cases of serious illness, and all infractions of rules touching boarding-houses.

VII. ACADEMY DIPLOMAS.

Granted under the regulations of the Protestant Committee of the Council of Public Instruction.

Graduates in Arts from any British or Canadian University, who have passed in Latin and Greek in the Degree Examinations, or

who have taken at least second class standing in Latin and Greek at their Intermediate Examination, shall be entitled to receive first class Academy diplomas, provided that they have also taken either (*a*) the regular course in the Art of Teaching at the McGill Normal School (or other public training institution outside the Province approved by the Protestant Committee), or (*b*) a first class standing in the special professional examination provided for such graduates by the McGill Normal School. Such aforesaid graduates as take only second class standing in the special professional examination of the foregoing sub-section (*b*) shall be entitled to second class Academy diplomas only.

Teachers taking Academy diplomas in course from the McGill Normal School, who take at least second class standing in Latin and Greek in the Intermediate Examination of the Universities, shall be entitled to receive first class Academy diplomas, otherwise their diplomas shall be second class.

Teachers who hold (*a*) Academy diplomas granted before the first July, 1886, or (*b*) second class Academy diploma granted under these regulations, and who produce satisfactory proof to the Protestant Committee that they have taught successfully for at least ten years, shall, when recommended by the committee, be entitled to receive first class Academy diplomas.

Any candidate who presents to the Principal of the McGill Normal School, (*a*) the requisite certificates of age and of good moral character according to Form No. 1, and (*b*) satisfactory certificates that he has complied with either of the foregoing regulations, shall be recommended by him to the Superintendent of Public Instruction, for an Academy diploma of the class to which he is entitled under these regulations.

The examination of Bachelors of Arts and of members of graduating classes, who are candidates for Academy diplomas, shall be held in the McGill Normal School, on or after the 15th of May each year, and the results shall be declared at the close of the Normal School Session in May. (*See Note f.*)

The Principal of the school is authorized to send examination papers, based on the syllabus given in Reg. 59, to the University of Bishop's College for the use of students in the graduating class, and such students shall receive their diplomas on their graduating.

The period of study in the Model School for such candidates shall be fixed from time to time by the Principal, and shall extend over at least four weeks. * Candidates who produce certificates that they have taught successfully for at least one year may be exempted from attendance at the Model School.

The results of the examination must show that the candidate has a competent knowledge :

1. Of the School Laws of the Province and of the regulations made by the Protestant Committee of the Council of Public Instruction, in so far as these refer to the duties of teachers.

2. Of the aim and possible attainment of school life, of the annual progress to be expected, of the best classification and the best arrangement of school duties tending to this end, and of the mode of recording all facts representing the attendance and progress of pupils that may be necessary.

3. Of discipline, and, in relation to it, the teacher, the parents, the pupils, rewards, punishments, and the formation of the habit of instinctive obedience.

4. Of the best methods of imparting knowledge ; how to fix it in the memory, how rightly to govern a class in receiving knowledge, and how to conduct a successful class recitation, together with the methods of instruction in each important branch of school work.

5. Of methods of using books aright, and of investigating truth by weighing evidence and by using the senses as instruments of research.

6. Of the physical, mental and moral constitution of the child, and the demands that society will hereafter make upon him.

To prepare for such an examination, the candidate should carefully weigh his own experiences as a learner, should closely examine the methods in vogue in a good school, and should add to the impressions received from his general reading the results of studying the text-books on School Management and School Methods, prescribed for the Academy diploma, a thorough knowledge of which will be required.

* Bachelors of Arts will observe that the Principal of the Normal School has no power to dispense with this condition. Students in Arts about to graduate, and desirous of securing the Academy diploma of the Normal School, are recommended to arrange with the Principal for fulfilling this condition during the earlier part of the Session.

These books are Baldwin's Art of School Management and Gladman's School Methods.

FORM No. 1.

"This is to certify that I, the undersigned, have personally known and had opportunity of observing..... for the .....last past, that during all such time *his* life and conduct have been without reproach; and I affirm that I believe *him* to be an upright, conscientious, and strictly sober *man.*"

This certificate must be signed by the Minister of the Congregation to which the Candidate belongs, and by two School Commissioners or Trustees or Visitors.

VIII. NOTES ON THE PRECEDING REGULATIONS.

Chiefly extracted from the By-Laws of the McGill Normal School.

(*a*) On application to the Principal of the School, candidates for admission will be furnished with forms of application, containing the required forms of certificate of good character and of agreement to teach for three years in some public School in the Province of Quebec.

(*b*) Teachers-in-training admitted to the Elementary Shool class at the beginning of a session must be able to parse correctly a simple English sentence; to write a neat dictation from any school reader, with no more than five per cent. of mistakes in spelling, in the use of capitals and in the division of words into syllables, to give the names and state the position of the continents, of the oceans, of the greater islands, peninsulas, capes, mountains, gulfs, bays, straits, lakes, and rivers, and of the chief political divisions and most important cities of the world; and to work correctly examples in the simple rules of arithmetic and in fractions.

(*c*) Teachers in-training are expected to give their whole time and attention to the work of the school, and are not permitted to engage in any other course of study or business during the session of the school.

There shall be no intercourse between male and female teachers-in-training while in school, or when going to or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Teachers-in-training who leave the Normal School in the middle of a session are expected to assign to the Principal satisfactory reasons, accompanied in case of failure of health by medical certificates.

(*d*) The J. C. Wilson prize of forty dollars and a book, annually chosen by the donor, shall be given to that teacher-in-training of the Elementary School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

The Prince of Wales' medal and prize shall be given to that teacher-in-training of the Model School class who passes for the diploma, and takes the highest aggregate of marks at the final examination of the year.

The Lord Stanley silver medal shall be given to that teacher-in-training of the Academy class, who at the University Intermediate Examinations has passed for a diploma with the highest aggregate of marks. If in any year there are teachers-in-training in two Universities, the Principal of the Normal School, in view of the examinations set, and of the number of marks reported for each examination, shall determine to whom this medal shall be awarded.

(*e*) In order to be recognized as teachers-in-training for the Academy diploma, students who have fulfilled the conditions stated in the regulations of the Protestant Committee of the Council of Public Instruction must apply at the beginning of each collegiate year to the Principal of the Normal School for enrolment, and for certificates of enrolment to be presented to the Dean of the Faculty of Arts. Having entered college, they must report to the Principal of the Normal School from time to time as he may require; and must furnish him with certificates of having successfully passed their several examinations, without which certificates, signed by the Dean of the Faculty or his representative, no bursaries shall be paid.

(*f*) The date of the examination of graduates in Arts for Academy diplomas shall be the 20th day of May, or the school day next succeeding that date; the hours shall be from 10 a.m. to 12 noon.

(*g*) No boarding house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the Students in private boarding houses approved by the Principal, who will furnish lists to applicants for admission. Board can be obtained at from $12 to $16 per month.

IX. COURSE OF STUDY.

N. B.—The subjoined Course of Study has been designed, and all instruction in it is given, with express reference to the work of teaching.

In addition to the work of the School carried on by its regular professors, as detailed in the subjoined course of study, arrangements have been made by which lectures on School Law will be delivered by Rev. E. I. Rexford, B. A., Secretary of the Department of Public Instruction; on Botany, by Professor Penhallow, B. Sc.; and on Physiology and Hygiene by Thomas Reed, Esq., M. D.

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating teachers actually in charge of schools at the commencement of the Session, and whose previous education may enable them to enter at a more advanced period, the course of study in this class is divided into terms, as follows :—

FIRST TERM, from September 1st to December 3rd.

(*Entrance examination as stated above*).

English.—The structure of sentences. Orthography and orthoepy. Penmanship. The study of Milton's L'Allegro.

Geography.—General view of continents and oceans. Map of North America with special reference to the Dominion.

History.—Outline of general and sacred history.

Arithmetic.—Simple and compound rules.

Algebra.—The elementary rules.

Geometry.—Elementary Notions.

French.—Darey's Principes de Grammaire Française to page 50, with verbs of first conjugation. Méthode Berlitz.

French Geography.—Eléments de Géographie Moderne, Amérique.

Botany.—Lectures.

Chemistry.—Lectures.

Reading and Elocution.

Drawing.—Elements, simple outlines and map drawing.

Music.—Vocal music with part songs. Junior Certificate of Tonic Sol-Fa College.

Art of Teaching.—Lectures on the principles of education, especially on those derived from the mental and moral nature of the child.

SECOND TERM, January 6th to end of Session.

(*No pupils will be received after the commencement of this term. Those who enter must pass the examination of the class in the work detailed above.*)

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Milton's Il Penseroso and of Goldsmith's Deserted Village.

Geography.—Contour, elevations, river systems, political divisions and chie cities of South America and of the Old World, with special reference to the British Islands.

History.—England.

Arithmetic.—Fractions, Decimals, Proportion, Interest, Properties of numbers, Mensuration.

Book-keeping.—Single Entry.

Algebra.—Simple equations of one unknown quantity with problems.

Geometry.—First book of Euclid, with deductions.

Art of Teaching.—Lectures on the principles of education, especially on those derived from the mental and moral nature of the child.

French.—Principes de Grammaire Française, page 100, with verbs regular and irregular. Méthode Berlitz.

French History.—Histoire de France.

French Geography.—Europe.

Botany.—Lectures.

Physiology and Hygiene.—Lectures.

Reading and Elocution.

Drawing.—Freehand drawing from the solid, and elements of perspective.

Music.—Elements of vocal music and part songs. Elementary Certificate of Tonic Sol-Fa College.

Practice in Teaching in the McGill Model Schools, as directed by the Principal.

Religious Instruction will be given throughout the Session.

In addition to the text-books named above, each student of the Elementary School Class must be provided with an English Grammar, an English History, an Atlas of recent date, an Arithmetic, an Algebra, and a Euclid.

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

Students entering the school in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without division into terms.

English.—Principles of grammar and composition. Style. History of the English language. Study of Shakespeare's Tempest, Scott's Lady of the Lake.

Geography.—Mathematical and physical. Use of the globes.

History.—Rome, Canada.

Art of Teaching.—Lectures on the principles of education, especially on those derived from the mental and moral nature of the child.

Arithmetic.—Commercial arithmetic. Logarithms.

Book-keeping.—Double Entry.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid, with application to mensuration.

Object Lessons.

Latin.—Grammar, Cæsar Gallic War.

Greek.—Optional to students sufficiently advanced.

French.—Translation from French into English, and from English into French, Worman's French Grammar, Lectures Françaises, Méthode Berlitz, Canadian History, L'Histoire du Canada par Miles, French Geography.

Agricultural Science.—Principles, especially chemical and botanical, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective, drawing from the cast and map drawing.

Music.—Instrumental music, part songs, and rudiments of harmony. Intermediate Certificate of Tonic Sol-Fa College.

Practice in Teaching.—In the McGill Model Schools, as directed by the Principal.

Religious Instruction throughout the Session.

Such students as, from their conspicuous ability and preparation, may be selected to enter the Academy Class of the Normal School, will, in addition to the work given above, read Xenophon, Anabasis, Book I., and Virgil, Æneid, Book I., with special attention to Greek and Latin Grammar.

In addition to the text-books named above, each student of the Model School Class must be provided with an English Grammar, a History of Canada, a History of Rome, an Arithmetic, an Algebra, a Euclid, and Dawson's Scientific Agriculture.

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA

Will follow for two years the course of McGill University and its affiliated colleges, or that of Bishop's College, Lennoxville, being enrolled on the books of the Normal School, and, if residents of the country, receiving a bursary from the Normal School not exceeding $30 per annum, and such tutorial assistance as may be deemed necessary. Such students must take in their courses such options only as are approved by the Principal of the Normal School.

The course for the current year in McGill College, for first year students, is :—

Greek.—Odyssey, Books XXI to XXIV. (Selections).

Latin.—Cicero. Select letters. Virgil, Book IX.

English Language and Literature.—Analysis and Composition. Milton's Comus and Bacon's Essays. Lectures on English Literature.

French.—Darey. Principes de Grammaire Française. La Fontaine, Les Fables, livres I. and II. Molière, L'Avare. Dictation and Colloquial exercises.

Mathematics.—Arithmetic. Euclid, six Books. Algebra to end of quadratics Plane Trigonometry.

Chemistry.—Lectures illustrated by experiment on chemical theories and laws, and on the more important elements and compounds.

The course for second year students is :—

Greek.—Euripides, Medea.

Latin.—Horace, Epistles, Book II. Tacitus, Germania.

French.—Ponsard, L'Honneur et l'Argent. Racine, Phèdre. Contanseau, Précis de Littérature Française. Dr. Johnson, Rasselas.

English Literature.—Shakspeare, A Mid-summer Night's Dream. Lectures

Psychology and Logic.—Murray's Hand-book of Psychology. Jevons' Elementary Lessons in Logic.

Botany.—Text-books, Gray and Bessey.

The course in Bishop's College for the current year is :—

Greek.—Æschylus, Prometheus, Plato, Crito.

Latin.—Horace, Odes II ; Sallust Jugurtha.

English.—Rhetoric and Grammatical Analysis, with a course of Lectures on English Literature.

History.—Greek and Roman.

French.—Translation, Grammar and Composition.

Mathematics.—Euclid, Books 1, 2, 3, 4 and 6. Algebra to Progressions. Arithmetic.

Physics.—Balfour Stewart's Elementary.

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Boys' School.—Thomas B. Smiley, *Head Master.*

Selina Sloan,
Elizabeth Reid, } *Assistants.*

Girls' School.—Jane E. Swallow, *Head Mistress.*

Mary J. Peebles,
Louisa McNaughton, } *Assistants.*

Primary School.—Lucy H. Derick, *Head Mistress.*

Marion Taylor, *Assistant.*

These Schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English Education. Fees, Boys' and Girls' Model Schools, $1 to $1.50 per month ; Primary School, 75c. ; payable monthly in advance.

Passed the University Examination.

SESSION 1888-9.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Barnard, Charles A.,	Montreal	Topp, Francis,	Montreal
Clerk, Ronzo H.,	Montreal		

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Aylen, W. W., Aylmer, Que.
Booth, J. S., Montreal, Que.
Brown, G. A., Charlottetown, P.E.I.
Campbell, G. G., B.Sc., Truro, N.S.
Creasor, J. A., B.A., Owen Sound, Ont.
Delaney, W. J., Peterboro', Ont.
England, W. S., Dunham, Que.
Esson, F. G., Halifax, N.S.
Garrow, A. E., Ottawa, Ont.
Gemmill, E. W., Almonte Ont.
Holmes, A. D., Chatham, Ont.
Hopkins, F. A., Cookshire, Que.
Hubert, P. T., Harbor Breton, Nfld.
Irwin, W, T., Pembroke, Ont.
Kerr, N., Holyrood, Ont.
Low, D., Palmerston, Ont.
Martin, J. M., Brown's Creek, P.E.I.
Mathieson, C. S., Harrington, P.E.I.
Morehouse, O. E., Gibson, N.B.
Mowat, M. M., Williamstown, Ont.
Muirhead, D. A., Carleton Place, Ont.
Murray, D. A., Black Meadows, N S.
McCurdy, T., Ormstown, Que.
McDonald, A., Iroquois, Ont.
McDonald, H. N., Laggan, Ont.
McDonald, G., Renfrew, Ont.
McDonald, P. A., Alexandria, Ont.
McEwen, H., Carleton Place, Ont.
McIntosh, D.H., Carleton Place, Ont.
McKercher, H., Stittsville, Ont.
McKinnon, T. H., Lockport, N.S.
McLennan, A. A., Indian River, P.E.I.
Philp, W. S., Montreal, Que.
Shanks, A. L., Huntingdon, Que.
Vipond, A. E., Montreal, Que.
Wheeler, C. L., B.A., Montreal, Que.
Whyte, J. J., Lancaster, Ont.
Wylde, C. F., Halifax, N.S.

PASSED THE PRIMARY EXAMINATION.

Alexander, W. W
Ault, C. A.
Beers, A. H.
Bennie, R.
Booth, J. S.
Bowie, R. A.
Brown, W. A.
Busby, J.
Calkin, B. H.
Clemesha, J. C.
Dewar, Alex.
Farwell, W. A.
Fletcher, R. W.
Gibson, R. J.
Gorrell, A. S.
Grafton, E. A.
Greene, T. J.
Hamilton, W. F.

Harris, N. M.
Harrison, J. D.
Hattie, W. H.
Hayes, John
Hubert, P. T.
Internoscia, Antonio
Jenkins, W. E.
Keir, E. J.
Kelly, C. I.
Kemp, H. D.
Lambert, E. M.
Love, A.
Lovering, W. T.
Mader, A. I.
Martin, M. McL.
Morrow, W. S.
Mulligan, E. A.
McCrimmon, A. A.
McMillan, J. H.
McGuire, J. C.
O'Connor, C.
Oliver, A. J.
Parke, G. H.
Patton, H. M.
Robertson, E. A.
Robertson, T. F.
Smith, C. F.
Sparling, A. J.
Speir, J. R.
Troy, W.
Tunstall, A.
Webster, R. E.
Williamson, H. M.
Williamson, W. P.
Woodruff, E. H.

FACULTY OF ARTS.

GRADUATING CLASS.

PASSED FOR THE DEGREE OF B.A.

In Honours.

(Alphabetically arranged.)

First Rank.—Deeks, William.
Gibson, William D
Reid, Helen R. Y.
Robertson, James.
Squire, Maude M.
Truell, Harry V.
Wilson, Alice Maude.

Second Rank.—None.

Third Rank.—None.

Ordinary.

(In Order of Merit.)

McGill College.

Class I.—Stevenson, James H.

Class II.—{ MacKenzie, Robert T.
{ Meighen, F. S.
Jamieson, Walter L.
Walsh, Thomas N.
Holden, Donald B.

Class III.—Read, F. W.
Garth, William H.
McCusker, S. F.

Aeger.—Rogers, William.

Morrin College.

Class I.—Whitelaw, James M.

Class II.—Robertson, Adam.
Smith, George H.
Sloane, Edith J.
MacLeod, Euphemia.

Class III.—None.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M.A. IN COURSE.

McGoun, Archibald, B.A.
Barlow, Alfred E., B.A.
Patterson, William, B.A.

ADMITTED TO THE DEGREE OF LL.D., "*Honoris Causâ.*"

George Stewart, D.C.L.

PASSED THE INTERMEDIATE EXAMINATION.

McGill College.

Class I.—Gunn, William Thos.
LeRossignol, W. J.
McGregor, John M.
Warne, James F.
Pattison, Mary L.
Henderson, William A.

Class II.—Ellenwood, William R.
Hipp, E. G.
Oliver, William.
McGregor, E. B
Hall, Bessie.
Whyte George.
Orton, Richard S.

Class III.—Reeves, Archibald C
Smith, Louise.
Warne, William A.
McAlpine, John J.
Hamilton, Dan. S.
McMillan, Helena.
Young, H. C.
Craik, Galen.
Cole, Arthur A. *s*,
Dobson, John R. *s*,
Guthrie, Donald. *s*,
McDougall, G. W *s*,
Moffatt, Eva L. *s*,
Tees, John. *s*,

s—With Supplemental Examination on one subject.

Morrin College.

Class I.—Pigeon, George Campbell.

Class II.—Brown, Martha L.

Class III.—MacLeod, F. G.

Lindsay, John. *s*,

Livingstone, Neil. *s*,

Webb, James D. *s*,

s.—With Supplemental Examination on one subject.

St. Francis College.

Class I.—Bannister, Alice.

Class II.—McLeay, A. A.

Class III.—None.

FACULTY OF APPLIED SCIENCE.

PASSED FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering (*Advanced Course.*)

IN ORDER OF MERIT.

Allan Wilmot Strong, John Holden Antliff.

Civil Engineering (*Ordinary Course.*)

IN ORDER OF MERIT.

Allan Wilmot Strong, Peter Lawrence Naismith; John Holden Antliff and Murdy John McLennan, equal; George Kyle Addie, Malcolm C. McFarlane.

Mechanical Engineering (*Advanced and Ordinary Courses*).

James Preston Tuplin.

Practical Chemistry.

IN ORDER OF MERIT.

George Morse Edwards, Milton Lewis Hersey, Andrew Young.

Scholarships and Exhibitions.

SESSION 1888-89.

FACULTY OF ARTS.

I. SCHOLARSHIPS (Tenable for two years).

Year of Award.	Names of Scholars.	Subject of Examination.	Annual Value.	Founder or Donor.
1887	Gibson, W. D.	Nat. Science.	$125	W. C. McDonald.
1887	Truell, H. V.	Class. & Mod. Lang	125	W. C. McDonald.
1887	Deeks, W. E.	Class. & Mod. Lang	120	Chas. Alexander.
1888	Tory, H. M.	Mathematics.	125	W. C. McDonald.
1888	Nicholls, A. G.	Class. & Mod. Lang	125	W. C. McDonald.
1888	MacDougall. Robert.	Class. & Mod. Lang	120	Chas. Alexander.
1888	Sutherland, H. C.	Nat. Science.	125	W. C. McDonald.

II. EXHIBITIONS (Tenable for one year).

NAMES OF EXHIBITIONERS.	Academic Year.	Annual Value.	Founder or Donor.
Daley, James.	Third	$125	W. C. McDonald.
Mack, Silas W.	"	100	Major Mills.
Le Rossignol, W. J.	Second	125	George Hague.
*Kollmyer, W. H.	First	125	W. C. McDonald.
*Wood, Arthur B.	"	125	W. C. McDonald.
*Robins, George D.	"	125	W. C. McDonald.
*Archibald, E. W.	"	100	Mrs. Redpath.
Ryan, Percy C.	"	100	Mrs. Redpath.

* The Governor-General's exemptions from Sessional Fees for four years were awarded to the students thus indicated.

Bursaries were awarded as follows:—To Gunn, W. T. (2nd year), a McDonald Bursary of $62.50; to Mitchell, R. (1st year), and Cushing, H. B. (1st year), Major Mills' Bursaries of $50 each.

Prizes, Honours and Standing.

SESSION 1888–89.

FACULTY OF LAW.

GRADUATING CLASS.

First Rank Honors and Elizabeth Torrance Gold Medal.—RONZO H. CLERK.

First Rank Honors and Second Prize for General Proficiency and Prize for Thesis.—FRANCIS TOPP.

Passed the Sessional Examination.

BARNARD, CHARLES A.
CLERK, RONZO H.
TOPP, FRANCIS.

Standing in Several Classes.

INTERNATIONAL LAW.—Professor TRENHOLME.

First, TOPP.
Second, CLERK.

ROMAN LAW.—Professor HUTCHINSON.

First, CLERK and TOPP, equal.

CRIMINAL LAW.—Professor ARCHIBALD.

First, TOPP.
Second, CLERK.

LEGAL HISTORY AND CIVIL LAW.—Professor LAREAU

First, CLERK and TOPP, equal.

CIVIL LAW.—Professor FORTIN.

First, CLERK.
Second, TOPP.

COMMERCIAL LAW.—Professor DAVIDSON.

First, TOPP.
Second, CLERK.

CIVIL PROCEDURE.—Professor McGOUN.

First, CLERK.
Second, TOPP.

SECOND YEAR.

First Rank Honors and First Prize for General Proficiency.—W. A. KNEELAND.
Second Rank Honors and Second Prize.—D. H. GIROUARD.

Passed the Sessional Examination.

WARREN ANDERSON KNEELAND.
DESIRÉ HOWARD GIROUARD.
GEORGE P. ENGLAND.
ALBERT E. HARVEY.
THOMAS J. VIPOND.
J. D. L. AMBROSE.

Standing in the Several Classes.

INTER NATIONAL LAW.—Professor TRENHOLME.

First, KNEELAND.
Second, HARVEY.

ROMAN LAW.—Professor HUTCHINSON.

First, KNEELAND, GIROUARD and HARVEY, equal.

CRIMINAL LAW.—Professor ARCHIBALD.

First, ENGLAND.
Second, VIPOND.

LEGAL HISTORY AND CIVIL LAW.—Professor LAREAU.

First, KNEELAND and GIROUARD, equal.

CIVIL PROCEDURE.—Professor McGOUN.

First, KNEELAND.
Second, GIROUARD and ENGLAND, equal.

CIVIL LAW.—Professor FORTIN.

First, KNEELAND.
Second, GIROUARD.

COMMERCIAL LAW.—Professor DAVIDSON.

First, KNEELAND.
Second, GIROUARD.

FIRST YEAR.

Second Rank Honors and Prize.—FRANCIS JOSEPH HATCHETTE.

Passed the Sessional Examinations.

F. J. Hatchette, Victor Geoffrion, Frederick W. Hibbard.

Standing in the Several Classes.

INTERNATIONAL LAW.—Professor TRENHOLME.

First, HATCHETTE.
Second, HIBBARD.

ROMAN LAW.—Professor HUTCHINSON.

First, HATCHETTE.
Second, GEOFFRION.

CRIMINAL LAW.—Professor ARCHIBALD.

First, HATCHETTE.
Second, GEOFFRION.

LEGAL HISTORY AND CIVIL LAW.—Professor LAREAU.

First, HATCHETTE.
Second, HIBBARD.

CIVIL PROCEDURE.—Professor MCGOUN.

First, HATCHETTE.
Second, HIBBARD.

CIVIL LAW.—Professor FORTIN.

First, HATCHETTE.
Second, GEOFFRION.

COMMERCIAL LAW.—Professor DAVIDSON.

First, HATCHETTE.
Second, HIBBARD.

FACULTY OF MEDICINE.

THE HOLMES GOLD MEDAL, FOR THE BEST EXAMINATION IN ALL THE BRANCHES COMPRISED IN THE MEDICAL CURRICULUM.—Alexander E. Garrow, of Ottawa, Ont.

THE PRIZE FOR THE BEST EXAMINATION IN THE FINAL BRANCHES.—Hugh McKercher, of Stittsville, Ont.

THE PRIZE FOR THE BEST EXAMINATION IN THE PRIMARY BRANCHES.—William Arthur Brown, of Chesterville, Ont.

THE SUTHERLAND GOLD MEDAL is awarded to John Craig Clemesha, of Port Hope, Ont.

The following, arranged in order of merit, deserve honorable mention:—

In the Primary Branches—Hamilton, Morrow, Busby, Bowie, Clemesha, Spier, Farwell, Grafton, Kelly, Dewar, Robertson, T. F. Troy, Williamson, W. P. McMillan and Alexander.

In the Final Branches—Campbell, McCurdy, Murray, Philp, England and Creasor.

PROFESSORS' PRIZES.

BOTANY.—W. B. Hallam Massiah, of Barbadoes, West Indies.

ANATOMY.—2nd year, W. A. Brown. Honorable Mention, T. F. Robertson. 1st year James Henderson, of Warkworth, Ont.

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Classics.

GIBSON, WILLIAM D.—First Rank Honours and Chapman Gold Medal.

B.A. Honours in Natural Science.

DEEKS, WILLIAM E.—First Rank Honours and Logan Gold Medal.

SQUIRE, MAUDE M.—First Rank Honours; Medal Prize *

B.A. Honours in Mental and Moral Philosophy.

TRUELL, HARRY V.—First Rank Honours and Prince of Wales Gold Medal.

WILSON, ALICE MAUD.—First Rank Honours; Medal Prize *

ROBERTSON, JAMES.—First Rank Honours.

B.A. Honours in Modern Languages.

REID, HELEN R. Y.—First Rank Honours and the Lord Stanley Gold Medal.

Special Certificate.

STEVENSON, JAMES H.

THIRD YEAR.

NICHOLLS, ALBERT G.—First Rank Honours in Classics and Prize, First Rank General Standing.

MCDOUGALL, ROBERT.—First Rank Honours in Mental and Moral Philosophy and Prize. First Rank General Standing.

* *A Medal Prize* is awarded to a candidate whose answering at the Examinations has been nearly equal to that of the Medallist.

ROBERTSON, ANDREW A.—First Rank Honours in Natural Science. First Rank General Standing.

TRENHOLME, EDWARD C.—First Rank Honours in Natural Science, First Rank General Standing. Prize in Zoology.

COLCLOUGH, WILLIAM F.—First Rank Honours in Classics and Prize.

FRASER, DANIEL J.—First Rank Honours in Mental and Moral Philosophy and Prize.

ELLIOTT, JAMES A.—First Rank Honours in Mental and Moral Philosophy.

MACK, SILAS W.—Second Rank Honours in English Language, Literature and History, and Prize. Prize for Collection of Plants.

TORY, HENRY M.—First Rank General Standing. Charles G. Coster Memorial Prize, for Students from the Maritime Provinces.

DALEY, JAMES T.—First Rank General Standing. Prize in Hebrew.

SUTHERLAND, HUGH C.—First Rank General Standing. Prize in English and Rhetoric.

FRY, FREDERICK M.—First Rank General Standing.

THIRD YEAR.

PASSED THE SESSIONAL EXAMINATIONS.

Williams, Derick, Tory, Daley; Nichols and Trenholme, equal; McDougall, Robertson; Abbott and Sutherland, equal; Colclough, Fry, Binmore, McVicar, Tolmie, Hall, Botterell (H. I.), Mack; Cameron and Moss and Elliott (J. A.), equal; Mathewson; McGregor and Walsh (A. W.), equal; Fraser and Parker and Richardson and Ross and Scott, equal; Botterell (J. T.), Swanson; Hunter and Reid and Elliott (E. A.), equal; Kinghorn, Finch, Macfarlane, Henderson.

SECOND YEAR.

GUNN, WILLIAM T.—(High School, Montreal).—First Rank General Standing; Prize in Logic, Prize in French.

LEROSSIGNOL, WALTER J.—(High School, Montreal).—First Rank General Standing, Second Prize in English, Prize in Logic, Prize in Botany.

MCGREGOR, JOHN M.—(High School, Montreal).—First Rank General Standing; Prize in French, Prize in German.

WARNE, JAMES F.—(Stanstead Wesleyan College, P.Q.).—First Rank General Standing, First Prize in English.

HENDERSON, WM. A.—(Stanstead Wesleyan College, P.Q.).—Prize in German.

PASSED THE SESSIONAL EXAMINATIONS.

Gunn, LeRossignol, McGregor (J. M.), Warne (J. F.), Pattison, Henderson, Ellenwood, Hipp, Oliver, McGregor (E. B.), Hall (B.), Whyte (G., Orton, Reeves, Smith, Warne (Wm. A.), McAlpine, Hamilton, McMillan, Young, Craik, Cole *s*, Dobson *s*, Guthrie *s*, McDougall *s*, Moffatt *s*, Tees *s*)

FIRST YEAR.

WOOD, ARTHUR B.—(High School, St. Johns, P.Q.)—First Rank Honours in Mathematics and Prize; First Rank General Standing, Prize in Greek, Prize in Latin, Prize in French, Prize in Chemistry.

KOLLMYER, W. HECTOR.—(High School, Montreal).—First Rank Honours in Mathematics and Prize; First Rank General Standing, Prize in Greek, Prize in English.

ROBINS, GEORGE D.—(High School, Montreal).—First Rank Honours in Mathematics and Prize, First Rank General Standing.

TAYLOR, JAMES.—(Ottawa Collegiate Institute).—Third Rank Honours in Mathematics and Prize.

CUSHING, HAROLD B.—(High School, Montreal).—Third Rank Honours in Mathematics and Prize.

ARCHIBALD, EDWARD.—(High School, Montreal).—First Rank General Standing, Prize in Greek and Roman History, Prize in French.

BARRON, ROBERT H.—(Lachute Academy, P.Q.)—First Rank General Standing.

PASSED THE SESSIONAL EXAMINATIONS.

Kollmyer and Wood, equal; Archibald, Pitcher, Boright, Robins, Barron, Taylor, Campbell (K. N.), Ross (R. O.), Cushing, Raynes, Ryan, Drum, Mitchell, Jaquays, McIver, Angus, MacDonald, Craig, Day, Davey; Tailey, Blachford (H.), Read (G. E.), Shaw; Brown and Davis, equal Sadler, Lyman, Leach, McHarg, McCoy, Russell, Smyth, Ellicott, Grisbrook, Hunt, Anderson, Ross (J. K.), Carmichael, Robertson (A.), Campbell (R. F.) *s*, Jekill *s*, McLennan *s*, Patterson *s*, Pritchard *s*.

s.—With supplemental Examination on one subject.

Professor's Prize for Collection of Fossils.—MacKenzie (R. T.).

Professor's Prize for Collection of Plants.—Mack (S. W.).

Neil Stewart Prize in Hebrew.—Stevenson (James H.).

Charles G. Coster Memorial Prize.—(To that student from the Maritime Provinces who has passed most creditably in the Sessional Examinations).—Tory, Hy. M.

New Shakspere Society's Prize.—Nicholson (J. A.), B.A.

At the Examinations in September, 1889, the following *Scholarships* and *Exhibitions* were awarded:—

SCHOLARSHIPS.—TENABLE FOR TWO YEARS.

THIRD YEAR.—*Mathematical.*—* Tory, H. M.
" " *Natural Sciences.*—* Sutherland, H. C.
" " *Classics and Modern Languages.*—* Nicholls, ** McDougall, R.

EXHIBITIONS.—TENABLE FOR ONE YEAR.

THIRD YEAR.—For the study of Natural Science.—* Daley, †† Mack.

SECOND YEAR.—† Le Rossignol, W. J. (High School, Montreal).

FIRST YEAR.—* Kollmyer, W. H. (High School, Montreal); * Wood. A. B. (High School, St. Johns, P.Q.); * Robins, G. D. (High School, Montreal); § Archibald, E. W. (High School, Montreal); § Ryan, Percy C. (Ottawa Collegiate Institute).

Bursaries were awarded to Gunn W. T. (High School, Montreal) $62.50 Mitchell R. (High School, Montreal), $50; Cushing, H. B. (High School, Montreal), $50.

SESSIONAL EXAMINATIONS, 1889.

McGILL COLLEGE.

*The mark * in the following list indicates Partial or Occasional Students.*

GREEK.

B.A. ORDINARY.—*Class I.*—Stevenson, Gibson. *Class II.*—Jamieson and Meighen, equal. *Class III.*—Garth and McCusker, equal; Read (F. W.), Walsh (Thos. N.).

THIRD YEAR.—*Class I.*—Colclough and Derick (*Prizes*), equal; Nichols (*Prize*), Fry; Abbott and Daley, equal; Mathewson and Moss and Tolmie, equal. *Class II.*—Cameron and Parker and Sutherland, equal; Hunter and Mack, equal; McGregor and Richardson, equal; Binmore; Reid and Ross and Swanson and Walsh (A. W.), equal; Finch. *Class III.*—Elliott, Henderson.

SECOND YEAR.—*Class I.*—Gunn, LeRossignol, McGregor (J. M.), Pattison, Henderson, Reeves, Warne (J. F.). *Class II.*—Hipp, Whyte (G.), Ellenwood, McGregor (E. B.); Dobson and McAlpine, equal; Hamilton and Orton, equal; Craik and Guthrie, equal. *Class III.*—Tees and Young, equal; Cole and Orton and Warne (W. A.), equal; Moore, Russell, Holden, Cameron, McLeod, McDougall.

FIRST YEAR.—*Class I.*—Wood, Kollmyer, Archibald; Barron and Ryan, equal; Robins, Campbell (K. M.), Ross (R. O.), MacIver. *Class II.*—Cushing and Taylor, equal; Mitchell, Jaquays, Blachford, Drum; Day and Read, equal; Pritchard; McCoy and McLennan, equal; Anderson. *Class III.*—Brown and Ellicott and Russell, equal; Davis, Shaw, Patterson, Williams, Sadler, Hunt, Davey; Aylen and Carmichael and Grisbrook, equal; Robertson (A. J.); Smyth and McHarg and Jekill, equal.

Prizes:—Wood, Kollmyer, Campbell (K. M.).

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* Value of Scholarship or Exhibition $125 yearly; founder W. C. MacDonald.
† Value $125 yearly; donor, George Hague, Esq.
** Value $100 to $120 yearly; foundress, Miss Barbara Scott.
†† Value $100; founder; Major Mills.
§ Value $100; foundress, Mrs Redpath.

LATIN.

B.A. ORDINARY.—*Class I.*—Squire, Gibson, Meighen. *Class II.*—Truell. *Class III.*—None.

THIRD YEAR.—*Class I.*—Williams (*Prize*); Colclough, Nichols, Derick, Trenholme; Abbott and Fry and Tolmie, equal; Binmore and McDuffee, equal; Robertson. *Class II.*—Parker; Hall and Hunter and Scott, equal; Sutherland, Botterell (Inez R.). *Class III.*—Botterell (Jeanie T.) and Kinghorn, equal; Moss, Macfarlane, Henderson.

LATIN.

SECOND YEAR.—*Class I.*—Le Rossignol, McGregor (J. M.), Warne (J. F.), Gunn, Waud, Henderson, Pattison. *Class II.*—McGregor (E. B.), Reeves, Warne (W. A.); Ellenwood and Smith, equal; McMillan; Hipp and Whyte (G.), equal; Dobson and Guthrie and Hall, equal; Oliver. *Class III.*—Hamilton and Moffatt, equal; Baillie, Tees, McAlpine; Orton and Young, equal; Cole, Russell, Whyte (J.), Craik and McLeod and Mooney, equal; Moore.

SECOND YEAR.—*Latin Prose Composition.*—*Class I.*—McGregor (J. M.), Le Rossignol, Henderson, Gunn, Waud, Pattison; Hipp and Reeves, equal; Warne (J. F.). *Class II.*—Ellenwood and Guthrie and Whyte (J.), equal; Oliver, McGregor (E. B.). *Class III.*—Dobson; Orton and Smith, equal; Cole, Warne (W. A.); Hamilton and Young, equal; McAlpine; Moffatt and Tees, equal; Moore; McLeod and McMillan and Russell, equal; Baillie and Craik and Hall, equal.

FIRST YEAR.—*Class I.*—Wood; Archibald and Kollmyer and Ryan, equal; Robins; Campbell (K. M.) and Pitcher, equal; Barron, Cushing, Boright, Jaquays, Taylor, Mitchell. *Class II.*—Angus; McDonald and Pritchard and Read, equal; Ross (R. O.), Tatley; Blachford and Day and Drum, equal; McLennan, MacIver, Lyman, Shaw, Patterson. *Class III.*—Smyth; Brown and Davis and Ellicott, equal; Davey and Leach, equal; Craik and Raynes, equal; Hunt, Anderson, Carmichael, McCoy, Russell; Aylen and McHarg and Ross (J. K.), equal; Grisbrook Morris, Robertson (A. J.), Campbell (R. F.), Sadler.

Prizes.—Wood, Campbell (K. M., Pitcher.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Archibald, Kollmyer, Campbell (K.), Robins, Pitcher; Jaquays and Wood, equal; Ryan, Mitchell; Barron and Drum and McLennan, equal; Day, McIver, Boright. *Class II.*—Davey; Cushing and Ross (J.) and Read and Ross (R. O.), equal; Lyman, Brown, McDonald, Russell, Raynes; Campbell (R. F.) and Shaw, equal. *Class III.*—Anderson, Tatley; McKenzie and Angus, equal; Blachford and Graham and Leach and Williams, equal; Davis, Craig; Hunt and Taylor, equal; Aylen and Grisbrook and McCoy and McHarg, equal; Smyth; McDuffee and Robertson, equal; Sadler, Morris, Saunderson, Blunt, Carmichael, Jekill. *Prize:*—Archibald.

MENTAL AND MORAL PHILOSOPHY.

B.A. ORDINARY.—(*Moral Philosophy*).—*Class I.*—Stevenson and Wilson, equal; Truell, Garth, Robertson, McKenzie; Holden and *Lee and Read, equal; Meighen. *Class II.*—*Austin; Jamieson and McCusker, equal; *Watt. *Class III.*—*Beattie.

B.A.—(*Additional Department in Mental and Moral Philosophy*). *Class I.*—Wilson, Truell, Robertson, Stevenson.

THIRD YEAR.—(*Mental Philosophy*).—*Class I.*—Williams; Fraser and McDougall and *Patton, equal; McVicar, Elliott (J. A.), Fry, Abbott, Tory *Class II.*—*Caldwell; Binmore and Hall, equal; *Oaten and Swanson equal; *Kennedy; McGregor (A.) and Richardson, equal; Kinghorn. *Class III.*—*Long, Finch, Elliott (E. A.), Moore (S.), *Moore (C. *Runions.

Prizes:—Williams; Fraser and McDougall, equal.

SECOND YEAR.—(*Logic*).—*Class I.*—LeRossignol, Wilson, Gunn, McGregor (E. B.), Pattison, Warne (J. F.), MacDougall, McGregor (J. M.); Hall and Henderson, equal. *Class II.*—Oliver, Baillie, (J. F.) Moffatt, Orton, Tees; McMillan and Smith, equal; Hipp and Reeves, equal. *Class III.*—*Clendinnen; Hamilton and *Judge and Whyte (G.), equal; Ellenwood and *Finley, equal; Guthrie and *Flagg, equal; *Chantler; McAlpine and Russell, equal; Craik, Young, *Humphrey, Whyte (J. T.), Warne (W. A.), Holden; Dobson and Flinn, equal; Cole. *Prizes*:—LeRossignol, Gunn, McGregor and Pattison.

EUROPEAN HISTORY.

B.A. ORDINARY.—*Class I.*—None. *Class II.*—Garth, Holden. *Class III.*—Robertson, Jamieson, Reid, McKenzie.

ENGLISH LITERATURE AND RHETORIC.

THIRD YEAR.—*Class I.*—Sutherland (*Prize*), Trenholme, Mack; Scott and Walsh equal; Tolmie, Moss. *Class II.*—Kinghorn, Parker; Hunter and Reid equal. *Class III.*—McDuffee, McGregor, Paton, Moore.
Additional Department in English Literature and History.—*Class I.* None.—*Class II.*—*Mack.*

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Warne (J. F.) (*First Prize*), Le Rossignol (*Second Prize*), Gunn, McGregor (J. M.), Pattison, Warne (W. A.), Ellenwood. *Class II.*—Hall and McAlpine and McMillan and Oliver, equal; Henderson, Mooney, Reeves, Orton; Dobson and Young, equal; Smith, MacDougall. *Class III.*—Whyte (G.), Hamilton, Hipp; Craik and Guthrie and Hunter, equal; McGregor (E. B.)

ENGLISH LITERATURE.

FIRST YEAR.—*Class I.*—Kollmeyer and Raynes, equal (*Prizes*); Angus and Boright, equal; Pitcher, Macdonald; Robins and Thomson (J.S.), equal; MacIver, Wood, Blachford; Campbell (K.M.) and Jaquays and Shaw, equal. *Class II.* Drum; Archibald and Barron and Mitchell and Sadler, equal; Taylor and Read, equal; Lyman, Campbell (R.), Ryan; Gourlay and Leach, equal; Grisbrook and Rankin, equal; Carmichael and Cushing, equal. *Class III.*—Eadie; Day and Tatley, equal; Craig and Dougall and Ross (R.O.), equal; Brown and Graham, equal; McCoy and Patterson and Ross (J.K.), equal; Smyth, McKenzie, Davis; Davey ad Hunt and MacLennan and Russell and Tener, equal; Ellicott; Blunt (S.B.) and Robertson, equal; McDiarmid and Pritchard, equal; Anderson; Aylen and McHarg, equal.

MECHANICS AND HYDROSTATICS.

B.A. ORDINARY.—*Class I.*—Walsh (T. N.). *Class II.*—Meighen. *Class III.*—Holden (D. B.), Garth.

THIRD YEAR.—*Class I.*—Tory, McDougall, Sutherland, McVicar, Hall, Daley, Mathewson, Tolmie. *Class II.*—Walsh (A. W.); Binmore and Ross, equal; Parker, Fry; Abbott and Moss, equal; Cameron, Hunter. *Class III.*—Botterell (J. T.), Reid, Fraser, Kinghorn, Elliott, Scott, Henderson, Macfarlane.

ASTRONOMY AND OPTICS.

B.A. ORDINARY.—*Class I.*—Mackenzie. *Class II.*—Holden (D. B.) and Jamieson (W. L.) and Walsh (T. N.), equal. *Class III.*—Read, McCusker.

THIRD YEAR.—*Class I.*—Tory, Abbott. *Class II.*—McDougall, Tolmie. *Class III.*—Binmore, Ross, Walsh (A. W.).

EXPERIMENTAL PHYSICS (*Electricity, Magnetism and Sound*).

B.A. ORDINARY.—*Class I.*—Deeks, Jamieson. *Class II.*—Walsh. *Class III.*—Meighen, Holden (D. B.), McKenzie, McCusker, Garth.

THIRD YEAR.—*Class I.*—Elliott (J. A.), McVicar, Tory. *Class II.*—Ross, Fraser (D. J.), Barnes*; Cameron and Mathewson, equal; Parker, Hunter.

TRIGONOMETRY AND ALGEBRA.

SECOND YEAR.—*Class I.*—Henderson, McGregor (J. M.), Gunn, Hipp, Whyte (G.), Warne (J. F.), Ellenwood, Pattison, Hunter, McDougall, Le Rossignol. *Class II.*—Guthrie, Cole, Hall; Oliver, McGregor (E. B., Moffatt. *Class III.*—Dobson and Hamilton and Holden, equal; Orton; Tees and Warne (W. A.), equal; Craik and McAlpine and McLeod, equal; Reeves, McMillan, Mooney, Smith, Whyte (J. T), Young.

FIRST YEAR.—*Class I.*—Kollmyer, Cushing, Wood, Taylor, Pitcher, Robins, Archibald, Barron. *Class II.*—Boright, McKenzie, Ross (R. O.); Day and Mitchell, equal; Campbell (K.) *Class III.*—Raynes and Ryan, equal; Davey; Davis and Drum and Smith, equal; Jaquays, McIver;

Angus and Russell, equal; Pritchard; Craig and McHarg and Morris and Sadler, equal; Ellicott, Brown; Leach and McDonald, equal; Shaw; Lyman and Robertson, equal; Tatley; Blachford and McCoy, equal; Anderson and Campbell (R. F.) and Hunt, equal; Graham and Read, equal; Grisbrook; Fraser (A. D.) and Ross (J. K.), equal; Patterson, Jekill.

GEOMETRY AND ARITHMETIC.

SECOND YEAR.—*Class I.*—Le Rossignol, Guthrie, Warne (J. F.); Ellenwood and McGregor (J. M.), equal; Gunn, Moffatt, Cole; Hipp and Oliver, equal. *Class II.*—Dobson, Tees, Holden, Mooney, Reeves: Orton and Whyte (J. T.), equal; Whyte (G.); McDougall and Pattison, equal; Russell. *Class III.*—Moore (L.); Hamilton and Henderson, equal; McGregor (E. B.), Hunter (J. C.), Hall, Smith, McLeod, Craik, Warne (W. A.), McAlpine, Baillie, Cameron, McMillan, Young.

FIRST YEAR.—*Class I.*—Kollmyer and Wood, equal; Taylor; Cushing and Pitcher, equal; Archibald, Boright, Barron, Ross (R. O.), Pritchard, Robins, Jaquays, McIver, Mitchell, Davey, Drum, Day, Craig. *Class II.*—McHarg and Raynes, equal; Shaw; McKenzie and Sadler, equal. *Class III.*—Campbell (K.), Russel, Morris; Brown and Davis, equal; Graham and Grisbrook and McCoy and Ryan and Smith, equal; McLennan; Anderson and Tatley, equal; McDonald, Read, Jekill; Blachford and Carmichael, equal; Robertson, Lyman, Hunt, Ross (J. K.), Ellicott and Fraser (A. D.), equal; Leach and Williams, equal; Patterson, Angus and Aylen, equal.

HONOUR EXAMINATION IN MATHEMATICS.

FIRST YEAR.—*First Rank Honours.*—Wood (*Prize*) Kollmyer *Prize*), Robins (*Prize*)—*Second Rank Honours.*—None.—*Third Rank Honours.*—Taylor (*Prize*), Cushing (*Prize*).

FRENCH.

FOURTH YEAR.—*Class I.*—Reid, Wilson. *Class II.*—Read.

THIRD YEAR.—*Class I.*—Williams, Abbott, Johnson, and Ross, equal. *Class II.*—Cameron, Robertson, Elliott, Binmore, Botterell J. T.) and Scott, (equal; Nicholls, Botterill (H. T. R.). *Class III.*—Parker, Hall, McDuffee, Mathewson and MacFarlane;

SECOND YEAR.—*Class I.*—Pattison (*Prize*), McGregor (J. M.) (*Prize*), Gunn (*Prize*), Smith, LeRossignol, Moffatt; Hipp and Young, equal. *Class II.*—Oliver, McGregor (E. B.), Ellenwood, Reeves, Baillie, Tees; Whyte (G.) and Hall and Mooney, equal; Warne (J. F.), McMillan. *Class III.*—Warne (W. A.); McDougall and Moore, equal; Holden, Cole, Whyte (J. T.)

FIRST YEAR.—*Class I.*—Archibald (*Prize*), Wood (*Prize*), Johnson (H.), Blachford (A.), Craig (*Prize*); Barron and Boright and Raynes and Kollmyer and Ryan, equal; Drum and Robins, equal; Rankin, Campbell (R.), Campbell

(K.). *Class II.*—Taylor, Pitcher, Macdonald, Angus and Blachford (H.), equal; Jaquays, McDuffee, Day, Leach, McIver, Mitchell, Sadler, Brown, McHarg. *Class III.*—Tatley; Humphrey and Smyth and Shaw, equal; Carmichael and Cushing, equal; McCoy, Hunt, Ellicott, Graham, Ross (J. K.), Lyman, Dougall.

GERMAN.

B.A. Ordinary.—*Class I.*—Reid (H.) and *Johnson (H.), equal. *Class II.*—Meighen, Gibson. *Class III.*—None.

Third Year.—*Class I.*—Botterell (H. I. R.) (*Prize*), Botterell (J. T.). *Class II.*—Macfarlane. *Class III.*—None.

Second Year.—*Class I.*—McGregor (J. M.) (*Prize*), McMillan, Moffatt, Ellenwood. *Class II.*—Baillie, Hall, Smith.

First Year.—*Class I.*—Boright (*Prize*), Macdonald, Angus, Campbell (K.M.), Campbell (R. F.), Craig, Pitcher, Raynes, Lyman, Henderson, Orton. *Class II.*—Tatley, McDuffee, Leach. *Class III.*—Ross, Jekill, Blunt, Williams.

HEBREW.

Advanced Course.—*Class I.*—Stevenson. *Class II.*—Ashton, Swanson. *Class III.*—Richardson, Finch, McCusker, Watt.

Intermediate Course.—*Class I.*—Patton. *Class II.*—MacAlpine, Russell A., Fraser D. J. *Class III.*—MacVicar, Austin, Moore, Craik; Hamilton and Capel, equal; Mitchell Th. A.

Elementary Course.—*Class I.*—Daley J. T. *Prize;* Fyles and Ross R. O., equal; Horsey, Judge, Elliott, Mack, Davis, Reid. *Class II.*—Caldwell, Davey, Flagg; Long and Eadie, equal; Colclough, Anderson, Patterson W., Read; Kennedy and Russell Wm., equal. *Class III.*—Tener and Lambly W. D., equal; Pritchard, Lee, MacLennan K., Sanderson; Robertson and Maynard Moise, equal; Bouchard; Maynard Etienne and Fraser A. D., equal; St. Aubin, Grisbrook, Charles, Morris, MacDiarmid.

The Neil Stewart Prize.—Stevenson.

GEOLOGY AND MINERALOGY.

Fourth Year.—*Class I.*—Deeks, Squire, Stevenson, McKenzie. *Class II.*—Jamieson and Walsh, equal; Caldwell*, Read. *Class III.*—Garth.

ZOOLOGY.

Third Year.—*Class I.*—Derick and Williams, equal (*Prize*); Trenholme (*Prize*), Robins* and Sutherland, equal; Binmore, Abbott; Hall and Nicholls; equal; Botterell (Inez), Scott, Cameron, Robertson, Moss; Daley and Matthewson, equal; McDougall, Richardson, Walsh, Botterell (Jane) and McGregor and Mack, equal. *Class II.*—Elliott and McFarlane, equal; Henderson, Ross, Fry, Swanson, Kennedy,* Moore (C.)*. *Class III.*—Kinghorn, Finch, Long,* Oaten,* Lambly,* Caldwell,* Mitchell,* Colclough, McDuffee, Paton.

BOTANY.

FOURTH YEAR.—*Class I.*—Kennedy.*

THIRD YEAR.—*Class I.*—Derick and Robertson, equal; Trenholme, *Class II.*—Henderson.

SECOND YEAR.—*Class I.*—LeRossignol, *Prize;* Stevenson*, McGregor (J. M.), Warne (J. F.), Gunn, Henderson; Pattison, *Prize*, and McDougall, equal; Orton, Moffatt and Warne (W. A.), equal; Hall; Baillie and Flagg*, equal. *Class II.*—McGregor (E.B.), and Smith, equal; Blachford and Ellenwood, equal; Young, Hamilton. *Class III.*—Oliver, McAlpine, Hipp, Russell, Mussen*, Craik, Guthrie, Chantler, Tees McMillan, Whyte (G.), Whyte (J. T.), Cole, Reeves, Dobson.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Tatley (*Prize*); Wood (*Prize*); Kollymer and Pitcher (*Prize*), equal; Ross (R. O.), Thomson (J. S.), Archibald; Boright and Campbell (K.) and Drum and Henderson (2nd Yr), equal. *Class II.*—Robins; Davey and Taylor, equal; Barron, Thompson (J.), Gourlay, McHarg, Raynes; Angus and McIver, equal; Clendinnen and Jackson, equal; Jaquays and McCoy and Mitchell, equal; Brown and Craig, equal. *Class III.*—Cushing, Tener, Sadler; MacDonald and Ryan, equal; Leach; Blachford (Henry) and McKenzie, equal; Patterson and Sanderson, equal; Pritchard and Williams, equal; Ellicott; Carmichael and Hunt and Jekill and Morris, equal; Grisbrook; Davis and Graham, equal; Aylen and Read, equal; Robertson; MacLennan and Smyth, equal; Lyman; Day and Eadie and Shaw, equal; Campbell (R. F.), Fraser, Ross (J. K.), Russell.

WICKSTEED MEDALS (*for Physical Culture.*)

R. T. McKENZIE—4th Year—Gold Medal.
W. OLIVER—2nd Year—Silver Medal.
A. A. COLE—2nd Year—Bronze Medal.

SPECIAL COURSE FOR WOMEN (DONALDA ENDOWMENT).

PRIZES AND STANDING.

GRADUATING CLASS.

B.A. Honours in Natural Science.

SQUIRE, MAUD N.—First Rank Honours. Medal Prize.

B. A. Honours in Mental and Moral Philosophy.

WILSON, ALICE MAUD.—First Rank Honours. Medal Prize.

B. A. Honours in Modern Languages.

REID, HELEN R. Z.—First Rank Honours and the Lord Stanley Gold Medal.

THIRD YEAR.

WILLIAMS, ANNIE.—First Rank Honours in Mental and Moral Philosophy and Prize; First Rank General Standing, Prize in Latin, Prize in Zoology.

DERICK, CARRIE M.—First Rank Honours in Natural Science, First Rank in General Standing, Prize in Classics, Prize in Zoology.

BOTTERELL, H. INEZ R.—First Rank Honours in Natural Science, Prize in German.

ABBOTT, MAUDE E.—First Rank General Standing.

PASSED THE SESSIONAL EXAMINATIONS.

Williams, Derick, Abbott, Binmore, Botterell (H.I.R.), Scott, Botterell (J.T.,) Macfarlane, Henderson.

PASSED IN CERTAIN CLASSES AS PARTIAL OR OCCASIONAL STUDENTS.

Robins, Johnson (N).

SECOND YEAR.

PATTISON, MARY L.—(McGill Normal School) First Rank General Standing,, Prize in Logic, Prize in French, Prize in Botany.

MCGREGOR, E. B.—(McGill Normal School). Prize in Logic.

PASSED THE SESSIONAL EXAMINATIONS.

Pattison, McGregor (E B.), Hall, Smith, McMillan, Moffatt.

PASSED IN CERTAIN CLASSES AS PARTIAL OR OCCASIONAL STUDENTS.

Blachford, Finley, Mussen, Waud (E.M.), Wilson.

FIRST YEAR.

PITCHER, ETHELWYN.—(Morrisburg High School, Ont.).—First Rank General Standing, Prize in Latin, Prize in Chemistry.

BORIGHT, MABEL.—(Sutton Academy, P.Q.)—First Rank General Standing, Prize in French, Prize in German.

CAMPBELL, KATE M.—(Girls' High School Montreal).—First Rank General Standing, Prize in Greek, Prize in Latin.

RAYNES, ETHEL.—(High School, Montreal).—Prize in English, Prize in French.

CRAIG, ELEANOR M.—(McGill Normal School)—Prize in French.

TATLEY, ELEANOR.—(Private tuition)—Prize in Chemistry.

PASSED THE SESSIONAL EXAMINATIONS.

Pitcher, Boright, Campbell (K.M.), Raynes, Angus, MacDonald, Craig, Tatley, Lyman, Leach, McCoy, Hunt, Ross (J.K.), Campbell, R.F. s,

PASSED IN CERTAIN CLASSES AS PARTIAL OR OCCASIONAL STUDENTS.

Galt, Johnson (H.), Tatley (H.).

.—With supplemental examination on one subject.

The prizes in this department are from the income of the Hannah Willard Lyman Memorial Fund.

MORRIN COLLEGE.

B.A. Ordinary Examination.

Greek.—*Class I.*—None. *Class II.*—Sloane, Whitelaw, MacLeod, *Class III.*—Robertson.

Latin.—*Class I.*—None. *Class II.*—Sloane, McLeod. *Class III.*—None.

Mechanics and Hydrostatics.—*Class I.*—Whitelaw, Robertson. *Class II.*—Smith, Sloane, McLeod. *Class III.*—None.

Astronomy and Optics.—*Class III.*—Smith.

Moral Philosophy —*Class I.*—Whitelaw, MacLeod, Smith, Sloane, Robertson.

French.—(*Ordinary*).—*Class I.*—Sloane. *Class II.*—MacLeod.

Hebrew.—(*Ordinary*)—*Class I.*—Whitelaw Robertson, Smith.

European History.—*Class I.*—Whitelaw, Sloane, MacLeod and Smith, equal. *Class II.*—Robertson.

Intermediate Examination.

Greek.—*Class I.*—Pidgeon. *Class II.*—Brown. *Class III.*—Logie, Webb, McLeod, Lindsay, Livingstone.

Latin.—*Class I.*—Brown. *Class II.*—Pidgeon, Webb, Logie, McLeod. *Class III.*—Livingstone, Lindsay.

Latin Prose Composition.—*Class I.*—Brown and Pidgeon, equal. *Class II.*—McLeod, Webb; Lindsay and Livingstone, equal. *Class III.*—Logie,

Trigonometry and Algebra.—*Class I.*—Pidgeon, Lindsay, Livingstone. *Clas, II.*—Webb. *Class III.*—Brown, Tanner, MacLeod.

Geometry and Arithmetic.—*Class I.*—Livingstone, Pidgeon. *Class II.*—Lindsay, Webb, Logie. *Class III.*—MacLeod, Tanner.

Logic.—*Class I.*—None. *Class II.*—Livingstone. *Class III.*—Brown, MacLeod; Pidgeon and Tanner, equal.

English Literature and History.—*Class I.*—Pidgeon. *Class II.*—Lindsay, Browne, Webb. *Class III.*—McLeod.

French.—*Class I.*—None. *Class II.*—Brown. *Class III.*—Webb.

HEBREW.—*Class I.*—Pidgeon, Lindsay. *Class II.*—Logie; Lindsay, MacLeod. *Class III.*—Tanner.

MORRIN COLLEGE.

B. A. EXAMINATION.—*Class I.*—Whitelaw, Robertson A., Smith G. H.

INTERMEDIATE EXAMINATION.—*Class I.*—Pidgeon, Lindsay. *Class II.*—Lorgie Livingstone, MacLeod S. G. *Class III.*—Tanner.

ST. FRANCIS COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class I.*—Bannister. *Class II.*—None. *Class III.*—McLeay.
LATIN.—*Class I.*—Bannister. *Class II.*—MacLeay. *Class III.*—None.
LATIN PROSE COMPOSITION.—*Class I.*—Bannister. *Class II.*—None. *Class III.*—MacLeay.
TRIGONOMETRY AND ALGEBRA.—*Class I.*—McLey, Bannister.
GEOMETRY AND ARITHMETIC.—*Class I.*—Bannister and McLeay, equal.
LOGIC.—*Class I.*—Bannister, MacLeay. *Class II.*—None. *Class III.*—None.
ENGLISH LITERATURE AND HISTORY.—*Class I.*—Bannister. *Class II.*—None. *Class III.*—MacLeay.
FRENCH.—*Class I.*—Bannister. *Class II.*—McLeay.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

ALLAN WILMOT STRONG.—British Association Gold Medal; $50 British Association Exhibition; Certificates of Merit in Designing, and Heat and Heat Engines.

GEORGE MORSE EDWARDS.—Stanley Silver Medal; First Rank Honours in, Natural Science; Logan Prize for collection of Insects; Certificates of Merit in Assaying, and Chemistry.

JAMES PRESTON TCPLIN.—Certificates of Merit in Designing, Heat and Heat Engines, and Machinery and Millwork.

MURDY JOHN MCLENNAN.—Certificate of Merit in Materials.

MILTON LEWIS HERSEY.—$25 Prize for Summer Report. Certificate of merit in Chemistry and Mineralogy.

PETER LAWRENCE NAISMITH.—Certificate of Merit in Geodesy and Practical Astronomy.

THIRD YEAR.

RICHARD SMITH LEA.—Scott Exhibition of $66.00; Prize for Summer Report; Prizes in Descriptive Geometry, Theory of Structures, Materials Geology, and Surveying.

ERNEST EDWARD S. MATTICE.—Prizes in Mathematics, and Theory of Structures.

PERCY NORTON EVANS.—Prizes in Mathematical Physics, Experimental Physics, Theoretical Chemistry, Practical Chemistry, Mineralogy, and Zoology

PETER WHITEFORD REDPATH.—Prize in Dynamics of Machinery.

GEORGE W. MOONEY.—Prizes in Experimental Physics, and Field Work Levelling.)

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering (*Advanced Course.*)

Richard Smith Lea and Ernest Stuart Mattice, equal.

Civil Engineering (*Ordinary Course*).

IN ORDER OF MERIT.

Richard Smith Lea, Ernest Edward S. Mattice, Charles Herbert Ellacott, Orrin Rexford, Albert Howard Hawkins, William Simeon Denison, Chester Bowditch Reed.

Mechanical Engineering (*Advanced Course*).

George W. Mooney.

Mechanical Engineering (*Ordinary Course*).

IN ORDER OF MERIT.

George W. Mooney, Peter Whiteford Redpath.

Practical Chemistry.

IN ORDER OF MERIT.

Percy Norton Evans, Robert Henry Jamieson, Sidney Calvert, William Smaill, Arthur E. Shuttleworth.

SECOND YEAR.

ERNEST ALBERT STONE.—Scott Exhibition of $66.00; prizes in Materials, Mathematics, Mathematical Physics, Experimental Physics, and Surveying.

THOMAS HENRY WINGHAM.—Prize in Descriptive Geometry.

WILLIAM HENRY WALKER.—Burland prize in Chemistry; prizes in Mechanism, and Practical Chemistry.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering.

IN ORDER OF MERIT.

Ernest Albert Stone, William Jardine Bulman, Robert Bickerdike, George Edward McCrea.

Mechanical Engineering.

IN ORDER OF MERIT.

Thomas Henry Wingham, Percy Howe Middleton, Miles Lawrence Williams.

Mining Engineering.

IN ORDER OF MERIT.

William Henry H. Walker, Hugh Yelverton Russel.

FIRST YEAR.

PETER HENRY LEROSSIGNOL—Prizes in Theoretical and Practical Chemistry, Mathematics, and French.

WILLIAM NORTON CUNNINGHAM.—Prizes in English, and German.

WILLIAM HENRY WARREN.—Prize in English.

JAMES G. R. WAINWRIGHT.—Prize in Freehand and Model Drawing.

PASSED THE SESSIONAL EXAMINATIONS.

IN ORDER OF MERIT.

Peter Henry LeRossignol, William Norton Cunningham, William Pitt Laurie Walter Chamblet Adams, Ellsworth Bolton, Forest Rutherford, Théophile Denis, Alonzo Klock, William Henry Warren, George Mitchell, Louis Benjamin Copeland, William C. G. Smart, John Hamilton Featherston, James George R. Wainwright, Peter J. Murphy, Arnold James Ryan, William Foster Fraser, Lawrence Naismith Pink, Lincoln Simpson, John Alexander Turner, George P. Tasker.

SUMMER REPORT.

FOURTH YEAR.—*Class I.*—Hersey (*Dextrine*) *Prize;* Addie (*Township Surveying*) and Strong (*G. T. Ry. Double Track*) and Tuplin (*Locomotive Construction*), equal; Naismith (*G.T.Ry. Double Track*); McFarlane (*Ry. Survey, Vaudreuil to Vankleek Hill*) and McLennan (*Railroading*), equal. *Class II.*—Antliff (*Smoke Consumption*), Young (*Cylindrical Concretions from Potsdam Sandstone, Lanark Co.*). *Class III.*—Edwards (*Aniline*).

THIRD YEAR.—*Class I.*—Lea (*Water Supply of Charlottetown, P.E.I.*) *Prize;* Calvert (*Bran v. Oatmeal, a Cattle-feeding Experiment*) and Evans (*Sugar of Milk*), and Smaill (*Notes on Preparation of a few Organic Chemical Compounds*) and Shuttleworth (*Study of Chemistry as a guide to Practical Agriculture*), equal; Mooney (*Steam Injectors*); Hawkins (*Survey of Township of Huron*) and Jamieson (*Manufacture of Varnish*) and Mattice (*Iron and Steel*) and Redpath (*High Speed Engines*), equal. *Class II.*—Ellacott (*Crown Surveys, Ont.*), Rexford (*Land Surveying in Ontario*), Reed (*Ry. Survey, Vaudreuil to Ottawa*). *Class III.*—Denison (*Railway Construction*).

FREEHAND AND MODEL DRAWING.

FIRST YEAR.—*Class I.*—Wainwright (*Prize*), Purves, Tasker; LeRossignol and Warren, equal; Rutherford. *Class II.*—Costigan, Copeland, Turner, Ryan, Mitchell; Pink and Stevenson, equal; Klock, Bolton; Denis and Featherston and Smart, equal; Cunningham and Simpson, equal. *Class III.*—Murphy, Adams, Fraser, Laurie.

DESCRIPTIVE GEOMETRY.

SECOND YEAR.—*Class I.*—Wingham (*Prize*), Stone, Ramsay; McCrea and Walker, equal; Bulman, Williams. *Class II.*—Middleton, Stuart, Russell. *Class III.*—Bickerdike.

THIRD YEAR.—*Class I.*—Lea (*Prize*), Mattice. *Class II.*—Ellacott, Mooney. *Class III.*—Redpath and Rexford, equal.

MECHANISM.

SECOND YEAR.—*Class I.*—Walker (*Prize*), Stone. *Class II.*—Wingham, Middleton, McCrea. *Class III.*—Stuart; Bulman and Ramsay, equal; Bickerdike, Russell, Williams.

PRACTICAL CONSTRUCTION.

FOURTH YEAR.—*Class I.*—Tuplin.

THIRD YEAR.—*Class I.*—None. *Class II.*—Redpath, Mooney.

SECOND YEAR.—*Class I.*—Williams, Middleton. *Class II.*—Wingham. *Class III.*—Ramsay.

MECHANICAL WORK.

SECOND YEAR.—*Class I.*—Middleton, Williams. *Class II.*—Wingham, Ramsay.

MOULDING AND FOUNDING.

SECOND AND THIRD YEARS.—*Class I.*—Mooney and Wingham, equal; Middleton, Williams. *Class II.*—Redpath, Ramsay.

MACHINERY (*Rivetted joints and toothed gearing*).

THIRD YEAR.—*Class I.*—Redpath. *Class II.*—Mooney.

GEOMETRY OF MACHINERY.

THIRD YEAR.—*Class I.*—None. *Class II.*—Mooney. *Class III.*—Redpath.

SURVEYING.

SECOND YEAR.—*Class I.*—Stone (*Prize*), Walker. *Class II.*—Bulman, Schwitzer. *Class III.*—Russel, Bickerdike, Middleton, McCrea, Williams, Wingham, Ramsay, Tighe.

THIRD YEAR.—*Class I.*—Lea (*Prize*), Mattice. *Class II.*—Hawkins, Reed, Denison. *Class III.*—Ellacott, Rexford.

GEODESY AND PRACTICAL ASTRONOMY.

FOURTH YEAR.—*Class I.*—Naismith (*Certificate of Merit*). *Class III.*—Strong, McFarlane.

ENGINE PROPORTIONS.

FOURTH YEAR.—*Class I.*—Tuplin (*Certificate of Merit*).

DYNAMICS OF MACHINERY.

FOURTH YEAR.—*Class I.*—Tuplin (*Certificate of Merit*).

THIRD YEAR.—*Class I.*—Redpath (*Prize*). *Class II.*—Mooney.

DESIGNING.

FOURTH YEAR.—*Class I.*—Tuplin (*Certificate of Merit*), Strong (*Certificate of Merit*), *Class II.*—Antliff, Addie, McLennan. *Class III.*—McFarlane and Naismith, equal.

THEORY OF STRUCTURES.—(*Advanced*).

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—None. *Class II.*—Strong, Antliff.

FOURTH YEAR.—(*Mechanical Engineering Course*).—*Class I.*—None. *Class II.*—Tuplin.

THIRD YEAR.—*Class I.*—Lea and Mattice, equal; Mooney.

THEORY OF STRUCTURES.—(*Ordinary*)

FOURTH YEAR.—*Class I.*—Naismith and Strong, equal. *Class II.*—Addie, McLennan, Antliff. *Class III.*—McFarlane.

THIRD YEAR.—*Class I.*—Lea (*Prize*) and Mattice (*Prize*), equal. *Class II.*—Mooney, Redpath; Ellacott and Rexford, equal. *Class III.*—Denison, Hawkins, *Reed.

* Reed passes with a supplemental examination in the subject matter of Paper II.

HEAT AND HEAT ENGINES.—(*Advanced Course.*)

FOURTH YEAR.—*Class I.*—Strong. *Class II.*—Tuplin. *Class III.*—Antliff.

HEAT AND HEAT ENGINES.—(*Ordinary Course*).

FOURTH YEAR.—*Class I.*—Strong (*Certificate of Merit*) and Tuplin (*Certificate of Merit*), equal. *Class II.*—Antliff, McLennan. *Class III.*—Addie.

HYDRAULICS—(*Advanced Course*).

FOURTH YEAR.—*Class I.*—Strong, Antliff.

HYDRAULICS—(*Ordinary Course*).

FOURTH YEAR.—*Class I.*—None. *Class II.*—Strong, Tuplin, Antliff. *Class III.*—McLennan, Addie.

MATERIALS.

FOURTH YEAR.—*Class I.*—McLennan (*Certificate of Merit*) and Naismith (*Certificate of Merit*) and Tuplin (*Certificate of Merit*), equal; Addie, McFarlane. *Class II.*—Strong, Antliff. *Class III.*—None.

THIRD YEAR.—*Class I.*—Lea (*Prize*), Mattice (*Prize*); Hawkins and Redpath, equal; Mooney, Rexford, Ellacott. *Class II.*—Reed, Denison. *Class III.*—None.

SECOND YEAR.—*Class I.*—Stone (*Prize*), Bulman (*Prize*), Wingham, Bickerdike, Williams, Tighe, Middleton. *Class II.*—Schwitzer. *Class III.*—Ramsay, McCrea, Stuart.

ESSAY.

FOURTH YEAR.—(*Determination of Latitude*)—*Class I.*—None. *Class II.*—Naismith. *Class III.*—McFarlane.

(*Thermo-dynamic Laws*).—*Class I.*—Strong, Tuplin. *Class II.*—Antliff and McLennan, equal. *Class III.*—Addie.

(*Relation of Chemistry to Mining and Manufacturing Industries*).—*Class I.*—Edwards. *Class II.*—Hersey. *Class III.*—Young.

THIRD YEAR.—(*Methods and Instruments employed in Geodesic Levelling*).—*Class I.*—None. *Class II.*—Lea, Mattice, Ellacott, Hawkins, Reed. *Class III.*—Rexford, Denison.

(*Transmission of Energy by belts and ropes.*)—*Class I.*—Redpath, Mooney.

(*Volumetric Analysis and its sources of Error.*)—*Class I.*—Evans, Smaill, Jamieson; Calvert and Shuttleworth, equal.

SECOND YEAR.—(*The lathe*).—*Class I.*—Middleton, Ramsay. *Class II.*—Wingham. *Class III.*—Williams.

(*Construction and use of Engineer's Transit*).—*Class I.*—Bickerdike and Stone, equal; Walker. *Class II.*—McCrea. *Class III.*—Bulman and Schwitzer and Tighe, equal; Stuart.

THEORETICAL AND PRACTICAL CHEMISTRY.

FIRST YEAR.—*Class I.*—Le Rossignol (*Prize*), Bolton, Adams, Mitchell, Laurie, Rankin. *Class II.*—Klock, Warren, Rutherford, Stevenson, Denis, Featherston; Copeland and Smart, equal; Cunningham and Wainwright, equal; Fraser. *Class III.*—Ryan, Pink, Tasker, Murphy, Purves, Turner Simpson.

N. B. Of the above, Pink, Tasker, Murphy, Turner and Purves pass with supplemental in Theoretical Chemistry, and Simpson with supplemental in Practical Chemistry.

SECOND YEAR.—(*Theoretical Chemistry only.*)—*Class I.*—None. *Class II.*—None. *Class III.*—Tighe, Bickerdike.

PRACTICAL CHEMISTRY.

SECOND YEAR.—(*Mining Course*).—*Class I.*—Walker (*Prize*). *Class II.*—None. *Class III.*—Russell.

THIRD YEAR.—(*Chemistry Course.*)—*Class I.*—Evans (*Prize*), Jamieson. *Class II.*—Shuttleworth, Smaill, Calvert.

THEORETICAL AND PRACTICAL CHEMISTRY.

FOURTH YEAR.—(*Chemistry Course*).—*Class I.*—Edwards, Hersey. *Class II.*—None. *Class III.*—Young.

THEORETICAL CHEMISTRY.

THIRD YEAR.—(*Chemistry Course.*)—*Class I.*—Evans (*Prize*), Smaill, Jamieson, Calvert, Shuttleworth.

ASSAYING.

FOURTH YEAR.—(*Chemistry Course*).—*Class I.*—Edwards, Hersey. *Class II.*—Young. *Class III.*—None.

METALLURGY.

FOURTH YEAR.—(*Chemistry Course*).—*Class I.*—Edwards, Hersey. *Class II.*—Young.

FOURTH YEAR.—(*Mechanical Engineering Course.*)—*Class I.*—Tuplin.

METEOROLOGY.

FOURTH YEAR.—*Class I.*—McFarlane and Naismith, equal; Addie.

LITHOLOGY.

FOURTH YEAR.—(*Chemistry Course*). *Class I.*— Edwards, Hersey. *Class II.*—Young.

MINERALOGY (*Advanced*).

FOURTH YEAR.—(*Chemistry Course*). *Class I.*— Edwards, Hersey. *Class II.*—Young.

THIRD YEAR.—(*Chemistry Course*). *Class I.*—Evans (*Prize*). *Class II.*—Jamieson, Calvert, Smaill, Shuttleworth.

ZOOLOGY.

SECOND & THIRD YEARS.—*Class I.*—Evans (*Prize*), Stone, Walker, Bulman. *Class II.*—McCrea, Calvert, Shuttleworth, Jamieson, Smaill, Russel, Bickerdike. *Class III.*—Schwitzer, Tighe, Stuart.

GEOLOGY AND MINERALOGY. (*Ordinary*).

FOURTH YEAR.—*Class I.*—Edwards; Hersey and Young, equal.

THIRD YEAR.—*Class I.*—Lea (*Prize*), Mattice. *Class II.*—Hawkins; Calvert, and Rexford, equal; Ellacott, Shuttleworth. *Class III.*—Denison, Reed.

MATHEMATICS.

FOURTH YEAR.—(*Advanced Astronomy.*) *Class I.*—None. *Class II.*—McFarlane, Strong, Naismith.

THIRD YEAR.—(*Advanced.*) *Class I.*—Mattice (*Prize*), Lea. *Class II.*—None. *Class III.*—Mooney.

THIRD YEAR.—(*Ordinary*). *Class I.*—Lea and Mattice, equal. *Class II.*—Rexford, Denison. *Class III.*—Ellacott, Hawkins, Reed.

SECOND YEAR.—*Class I.*—Stone (*Prize*), Walker. *Class II.*—Schwitzer, Bulman, Russel. *Class III.*—Bickerdike and Stuart, equal; Wingham, Middleton.

FIRST YEAR.—*Class I.*—Le Rossignol (*Prize*), Laurie, Cunningham. *Class II.*—Adams, Copeland, Rutherford, Bolton, Klock, Mitchell, Denis, Murphy, Smart. *Class III.*—Ryan, Wainwright, Featherston, Simpson, Warren, Fraser, Turner, Pink.

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Evans (*Prize*), Lea. *Class II.*—Calvert and Shuttleworth, equal; Denison, Mattice, Reed, Ellacott, Rexford. *Class III.*—Jamieson, Redpath; Mooney and Smaill, equal; Hawkins.

SECOND YEAR.—*Class I.*—Stone (*Prize*), Walker. *Class II.*—Russel, Wingham, Bickerdike. *Class III.*—Williams, Bulman, Middleton, McCrea, Stuart, Schwitzer.

EXPERIMENTAL PHYSICS.

THIRD YEAR.—*Class I.*—Mooney (*Prize*), Evans (*Prize*), Denison, Smaill, Redpath. *Class II.*—Jamieson, Calvert, Mattice; Shuttleworth and Ellacott, equal; Rexford. *Class III.*—Hawkins and Reed, equal.

SECOND YEAR.—*Class I.*—Stone (*Prize*), Walker. *Class II.*—Bulman, Russel, Bickerdike, Williams. *Class III.*—Middleton; Schwitzer and Wingham equal; McCrea.

ENGLISH.

FIRST YEAR.—*Class I.*—Cunningham (*Prize*) and Warren (*Prize*), equal; Le Rossignol. *Class II.*—Rutherford; Adams and Simpson, equal; Laurie and Murphy, equal. *Class III.*—Tasker; Featherston and Purves, equal; Bolton and Denis, equal; Smart, Stevenson, Fraser, Klock, Ryan, Turner, Wainwright; Copeland and *Costigan and *Mitchell and *Pink, equal.

SECOND YEAR.—*Class I.*—Wingham, Walker. *Class II.*—Russel; Schwitzer and Stone, equal. *Class III.*—McCrea, Williams, Bulman, Middleton; Ramsay and Stuart, equal; Bickerdike, Tighe.

THIRD YEAR.—*Class I.*—Rexford, Evans, Jamieson. *Class II.*—Reed, Smaill. *Class III.*—Redpath, Hawkins, Ellacott, Denison.

* With a Supplemental in Dictation.

FRENCH.

FIRST YEAR.—*Class I.*—Le Rossignol, (*Prize*), Laurie. *Class II.*—Cunningham, Adams. *Class III.*—Ryan, Featherston, Klock, Warren, Copeland, Wainwright, Tasker.

SECOND YEAR.—*Class I.*—None. *Class II.*—Stone, Wingham, Russel. *Class III.*—Bulman, Stuart, Schwitzer, Williams.

GERMAN.

FIRST YEAR.—*Class I.*—Cunningham (*Prize*), Bolton, Denis. *Class II.*—None. *Class III.*—McCrea, Fraser, Rutherford, Pink and Smart, equal; Mitchell.

SECOND YEAR.—*Class I.*—Walker.

SECOND YEAR.—(*1st Year Paper*).—*Class I.*—None. *Class II.*—None. *Class III.*—McCrea, Ramsay; Bickerdike and Tighe, equal.

THIRD YEAR.—*Class I.*—None. *Class II.*—Calvert. *Class III.*—Shuttleworth.

PASSED SUPPLEMENTAL EAMINATIONS IN FACULTY OF ARTS, 1888-89.

I.—September, 1888.

(*a*) Supplemental Sessional.

SECOND YEAR.—Moore, Paton, Swanson, Moss.

FIRST YEAR.—Cameron, Holden, Hamilton, McLeod, Craik.

(*b*) Supplemental in one subject.

SECOND YEAR.—Cameron (J. A.), Finch, Fry, Kinghorn, Ross, Trenholme.

FIRST YEAR.—Hipp, McDougall, Moore (L.), Whyte (J. T), Baillie, Moffatt, Macfarlane.

Students of the University.

SESSION 1889-90.

McGILL COLLEGE.

FACULTY OF LAW.

FIRST YEAR.

Francis J. Hatchette,	Montreal, Q	Hibbard, Frederick Wm.,	Dublin
Geoffrion, Victor,	Montreal, Q	Lamontagne, Charles O.,	Montreal, Q

SECOND YEAR.

Ambrose, J. D. L.,	Montreal, Q	Kneeland, Warren A.,	Montreal, Q
England, Geo. P.,	Sheffal, Q	Pelletier, Hormisdas Remi,	Marieville, Q
Girouard, Désiré Howard,	Montreal, Q	Vipond, Thomas John,	Montreal, Q
Harvey, Alfred Eugène,	Stanstead, Q		

THIRD YEAR.

Barnard, Chas. Austin,	Montreal, Q	Topp, Francis,	Montreal, Q
Clerk, Ronzo Heathcote,	Montreal, Q		

PARTIAL.

Barton, Percy,	Montreal, Q	Higginson, Albert,	Montreal, Q
Benedict, Charles,	Montreal, Q	James, Edward,	Montreal, Q
Brown, Alex. S.,	Montreal, Q	Massey, Thomas,	Montreal, Q
Campbell, Robert,	Montreal, Q	Mathewson, Frederick,	Montreal, Q
Cleghorn, Henry,	Montreal, Q	Miller, Duncan C.,	Montreal, Q
Fry, Arthur,	Montreal, Q	Miller, John,	Montreal, Q
Fulton, John Napier,	Montreal, Q		

FACULTY OF MEDICINE.

Adams, W. L., San Francisco, U.S.
Addy, G. A. B., St. John, N.B.
Akerly, A. W. K., Fredericton, N.B.
Alexander, W. W., Stanhope, P.E.I.
Anderson, A., Montreal, Q.
Ault, C. A., Oshkosh, Wis.
Ault, C. R., Tilsonburg, O.
Aylen, W. W., Aylmer, Q.

Bayne, C. W., Merivale, O.
Beaman, W. H., Montreal, Q.
Beers, A. H., Montreal, Q.
Bennie, R., Riverfield, Q.
Berwick, G. A., Farnham, Q.
Berwick, R. H., Farnham, Q.
Binmore, J. E., Montreal, Q.
Bissett, C. P., River Bourgeois, N.S.
Booth, J. S., Montreal, Q.
Bowen, G. A., Compton, Q.
Bowes, E. J., Ottawa, O.
Bowie, R. A., Brockville, O.
Boyce, B. F., Norham, O.
Broderick, E. J., Fredericton, N.B.
Brouse, J. E., Brockville, O.

Brosseau, J. A., Ottawa, O.
Brown, F. W. A., Brockville, O.
Brown, W. A., Chesterville, O.
Brown, G. A., Charlottetown, P.E I.
Bruce, D. A., Grand View, U.S.
Burnette, J. T., Cornwall, O.
Burritt, C. H., Mitchell, O.
Busby, J., Pontviews, O.

Calkin, B. H., Kentville, N.S.
Campbell, G. G., Truro, N.S.
Corbin, F. G., Bedford, N.S.
Carlaw, C. M., Warkworth, O.
Carmichael, H. B. W., Montreal, Q.
Chabot, J. L., Ottawa, O.
Chipman, P. J., Halifax, N.S.
Clark, J., Troy, O.
Clarke, J. W., Tatamagouche, N.S.
Clemesha, J. C., Port Hope, O.
Clune, P. J., Warkworth, O.
Coburn, A. D., Keswick Bridge, N S.
Coleman, A. H., Belleville, O.
Connolly, J. A., Lennoxville, Q.
Cooper, W. A., Ormstown, Q.
Creasor, J. A., Owen Sound, O.
Curtis, I. B., Hartland, N.B.

Day, A. R., Guelph, O.
Delaney, W. J., Peterboro', O.
Delphey, E. V., Erie, Mich.
Dewar, A., Ormond, O.
Dickson, N. N., Pembroke, O.

Ellis, T. H., Pembroke, O.
Ellis, W. L., St. John, N.B.
England, W. S., Dunham, Q.
Esson, A. C., Halifax, N.S.
Esson, F. G., Halifax, N.S.
Evans, D. J., Montreal, Q.

Farwell, W. A., Lennoxville, Q.
Fletcher, R. W., Londonderry, N.S.
Fulton, J. A., Franklin Centre, O.

Garrow, A. E., Ottawa, O.
Gemmill, E. W., Almonte, O.
Gibson, R. J., Clinton, O.
Glendenning, R. F., Truemanville, N.S.
Grafton, E. A., Montreal, Q.
Graham, W. C. K., Prescott, O.
Grant, H. A., Pembroke, O.
Gorrell, A. G., Brockville, O.
Green, T. J., Appleton, O.

Halliday, V., Peterboro', O.
Hamilton, H. D., Montreal, Q.
Hamilton, W. F., Sackville, N.B.
Harris, N. M., Ormstown, Q.
Harrison, J. D., Fredericton, N.B.
Hattie, W. H., New Glasgow, N.S.
Hayes, J., Nelson, N.B.
Hayes, Jno., Richmond, Q.
Hayes, P. J., Montreal, Q.
Henderson, J., Warkworth, O.
Hilton, W. L., Montreal, Q.
Hogg, D. H., Stratford, O.
Holden, D. B., Montreal, Q.
Holmes, A. D., Chatham, O.
Hopkins, F. A., Cookshire, Q.
Hubert, P. T., Harbor Breton, Nfld.
Hughes, J. M., Chesterville, O.
Hume, G. L., Leeds, O.

Ibbotson, F. A., Montreal, Q.
Inksetter, W. E., Copetown, O.
Internoscia, A., Montreal, Q.
Irwin, H., Pembroke, O.
Irwin, W. T., Pembroke, O.
Irving, E., Pembroke, O.

Jack, M. G. DeV., Fredericton, N.B.
Jamieson, Thos., Buffalo, N.Y.
Jayet, A. A., Montreal, Q.
Jenkins, W. E., Conquerall, N.S.
Jento, C. P., Mellville, O.
Johnson, Albert, ——, O.
Jones, W. A., Clandeboye, O.

Kee, D. M., Fordyce, O.
Keir, E. J., Princeton, P.E.I.
Kelley, C. J., West Flamborough, O.
Kemp, H. D., Montreal, Q.
Kent, H. V., Truro, N.S.
Kerr, N., Holyrood, O.
Kerr, W. J., Montreal, Q.
King, H. S., Sarnia, O.

Labell. M. J., Lewis, N.Y.
Lambert, E. M., Ottawa, O.
Lang, F. W., St. Marys, O.
Langley, A. F., Victoria, B.C.
Lewin, A. A., St. John, N.B.
Liddell, G. L., Cornwall, O.
Love, A., New Glasgow, O.
Lovering, W. T., Northfield, Minn.
Low, D., Palmerston, O.

Mader, A. I., New Canada, N.S.
Mair, A. W., Clinton, O.
Martin, C. F., Montreal, Q.
Martin, M. McL., Brown's Creek, P.E.I.
Martin, J. M., Brown's Creek, P.E.I.
Martin, S. H., Savage Mines, Q.
Massiah, W. B. H., Barbadoes, W.I.
Masson, H. J., Peterboro', O.
Mathieson, C. S., Harrington, P.E.I.
Mead, Chas., Morrisburg, O.
Meikle, W. F., Morrisburg, O.
Mill, J., Aylmer, Q.
Morehouse, O. E., Gibson, N.B.

Moore, J. M., Belleville, O.
Morphy, A. G., London, O.
Morris, O., Pembroke, O.
Morris, F., Fareville, N.B.
Morrow, W. S., Halifax, N.S.
Moss, J. M., Carleton Place, O.
Mowat, M. M., Williamstown, O.
Muirhead, D. A., Carleton Place, O.
Mulligan, E. A., Aylmer, Q.
Murray, D. A., Black Meadows, N.S.
Murray, M. W., Beachwood, O.
Mutch, P. R., St. John, N.B.
McCann, E., Smith's Falls, O.
McCrimmon, A. A., St. Thomas, O.
McCurdy, T., Ormstown, Q.
McDonald, M. S., Scotchtown, O.
McDonald, H. N., Laggan, O.
McDonald, G., Renfrew, O.
McDonald, A , Iroquois, O.
McDonald, P. A., Alexandria, O.
McEown, F., Winnipeg, Man.
McEwen, H., Carleton Place, O.
McGauran, G. F., Richmond, Q.
McGregor, J. G., Martintown, O.
McGuire, J. C., Trenton, O.
McHarg, R. F., Leeds, O.
McIntosh, D. H., Carleton Place, O.
McKay, D. T , Clifton, P.E.I.
McKay, H. H., Pictou, N.S.
McKee, G. L., Coaticook, Q.
McKechnie, R. E., Winnipeg, Man.
McKenty, J. E., Richmond, Q.
McKenzie, P. J., Melbourne, Q.
McKenzie, R. T., London, O.
McKercher, H., Stittsville, O.
McKinnon, T. H., Lockport, N.S.
McKinnon, A J., Kinross, O.
McLellan, A C., Indian River, P E.I.
McLellan, A. A., Summerside, P.E.I.
McLennan, D. A., Fournier, O
McLeod, H. S., Dunstaffnage, P.E.I.
McManus, H. D., Fredericton, N.B.
McMillan, J. H., Pictou, N.S.
McNally, H., Fredericton, N.B.
McPhillips, X., Winnipeg, Man.

Noble, C. T., Sutton, O.

O'Connor, C., Worcester, Mass.
Oliver, A. J., Cowansville, Q.
Outwater, S. W., Plainfield, O.

Palmer, P. E., Riverside, N.B.
Park, G. H., Quebec.
Paterson, L., Harbor Grace, Nfld.
Patton, H. M., Winnipeg, Man.
Peake, J. P., Fredericton, N.B.
Phelan, E D., Montreal, Q.
Philp, W. S., Montreal, Q.

Reed, T. B., Montreal, Q.
Reid, J. T., Montreal, Q.
Richards, S., Ottawa, O.
Robertson, T. F., Brockville, O.
Robertson, W., Chesterfield, O.
Robertson, E. A., Lennoxville, Q.
Richardson, W. B., Chicago, Ill.
Robinson, B. E., Orillia, O.
Rodgers, W., Montreal, Q.
Ross, J., Halifax, N.S.
Ross, H. R., Quebec.

Scovil, W. T., Fredericton, N.B.
Shanks, A. L., Huntingdon, Q.
Smith, T. H , North Sydney, C B.
Smith, W. D., Plantagenet, O.
Smith, C. F., West Winchester, O.
Smith, A. G , St. Marys, O.
Sparling, A. J., Pembroke, O.
Spier, J. R., Lindsay, O.
Springle, J. A., Clarenceville, Q.
Swaill, Wm., Montreal, Q.

Taplin, M M., Addison, Q.
Taylor, J. N., Ottawa, O.
Taylor, T. T., Montreal, Q.
Telfer, W. J., Burgoyne, O.
Thompson, F. E., Quebec
Thompson, J., Moulinette, O.
Tremblay, L., Ottawa, O.
Troy, W., Valleyfield, Q.
Tunstall, A., Montreal, Q.

Vipond, A. G., Montreal, Q.

Walker, W. G., Stratford, O.
Walsh, T. N., Ormstown, Q.
Walsh, W. E., Ormstown, Q.
Watson, N. M., Williamstown, O.
Webster, R. E., Brockville. O.
Wheeler, C. L , Montreal, Q.
White, D. D., Montreal, Q.
Whyte, J. J., Lancaster, O.
Wilson, W. A., Derby, N.B.
Williamson, H. M., Guelph, O.
Williamson, W. P., Chatham, O.
Woodruff, E. H., St. Catharines, O.

Yates, H. B., Brantford, O.
Yorston, F. S., Truro, N.S.

FACULTY OF ARTS.

Undergraduates.

FIRST YEAR.

Name	*School.*	*Residence.*
Anderson, John D.,	Private Tuition,	Tiverton, O
Archibald, Edward,	H. S., Montreal,	Montreal, Q
Aylen, Ernest D.,	Lachute Academy,	Aylmer, Q
Barron, Robt. H.,	Lachute Academy,	Lachute, Q
Blachford, Henry,	Huntingdon Academy,	Huntingdon, Q
Blunt, Henry W.,	Waterloo Academy,	West Bolton, Q
Blunt, Simon B.,	Waterloo Academy,	Knowlton, Q
Brown, Daniel,	Huntingdon Academy,	Morris Flats, Q
Carmichael, S.,	Bishop's College School,	Montreal, Q
Cushing, Harold B.,	H. S., Montreal,	Montreal, Q
Davey, R. George,	Whitby Collegiate Institute,	Whitby, O
Davis, Ernest A.,	Huntingdon Academy,	Morris Flats, Q
Day, Maurice B.,	H. S., Montreal,	Montreal, Q
Drum, Lorne.	Bishop's College School,	Quebec, Q
Ellicott, T. W. H.,	H. S., Montreal,	Montreal, Q
Fraser, Allan,	Huntingdon Academy,	Dundee, Q
Fraser, Alex. D.,	Huntingdon Academy,	Dundee, Q
Grisbrook, Ed. O.,	Private Tuition,	Sarnia, O
James, K. G. H.,	Clifton, England,	Bristol, Eng
Jaquays, H. M.,	Sutton Academy,	Sutton, Q
Jekill, Henry,	Dioc. Theological College,	Morris Flats, Q
Kollmyer, W. Hector,	H. S., Montreal,	Montreal, Q
Mallarg, Robert J.,	St. Francis College,	Quebec, Q
MacIver, E J.,	H S., Montreal,	Montreal, Q
McKenzie, Wm.,	H. S., Morrisburg,	Morrisburg, O
McLennan, Kenneth,	H. S., Alexandria,	Alexandria, O
Meade, Charles J.,	H. S., Morrisburg,	Morrisburg, O
Meikle, Wm. F.,	H. S , Morrisburg,	Morrisburg, O
Mitchell, R J. W.,	H. S., Montreal,	Montreal, Q
Patterson, Wm ,	Ottawa Collegiate Inst.	Cantley, Q
Pritchard, Wm. S.,	H. S., Harriston,	Redgrave, O
Read, George E ,	Cherville College,	Romsey, Eng.
Robertson, A.,	H. S., Weston,	Woodbridge, O
Robins, George D.,	H. S., Montreal,	Montreal, Q
Rodger, David A.,	Lachute Academy,	Genoa, Q
Ross, Robert O.,	Baddock Ac., C.B.,	Margaree, C.B
Russell, Wm.,	H. S., Montreal,	Matane, Q
Ryan, Percy C.,	Ottawa Collegiate Inst.,	Montreal, Q
Sadler, Thomas A.,	Huntingdon Ac.,	Dewitville, Q
Shaw, Henry S.,	H. S., Montreal,	Montreal, Q
Smyth, Walter H.,	H. S., Montreal,	Montreal, Q
Taylor, James,	Ottawa Collegiate Inst.	Ottawa, O
Thompson, James,	Lachute Ac.,	Bristol, Q
Wasson, Hilliard,	Peterboro Collegiate Inst.	Warsaw, O
Williams, Edward J.,	H. S., Pembroke	Montreal, Q
Wood, Arthur B.,	H. S., St. John's, Q.,	St. John's, Q

SECOND YEAR.

Cameron, Donald E.,	H. S., Montreal,	Montreal, Q
Cole, Arthur A.,	H. S., Montreal,	Montreal, Q
Craik, Galen,	Huntingdon Ac.,	Rockburn, Q
Dobson, John R.,	Pictou Academy,	Pictou, N S

Ellenwood, Wm. R.,	Private Tuition,	Yarmouth, N S
Flinn, John W.,	Pictou Academy,	Wallace, N S
Gunn, Wm. Thos.,	H. S., Montreal,	Montreal, Q
Guthrie, Donald,	Guelph Collegiate Inst.,	Guelph, O
Harris, Wm.,	St. Catharine's Collegiate Inst.,	Brantford, O
Hamilton, Dan. S.,	Private Tuition,	Ravenswood, O
Henderson, Wm. A.,	St. Mary's Collegiate Inst., O.,	Stanstead, Q
Hipp, E. G.,	King's College, London Eng,.,	Montreal, Q
Holden, Arthur R.,	H. S., Montreal,	Montreal, Q
Hunter, James C.,	H. S. Pembroke,	Pembroke, O
LeRossignol, W. J.,	H. S., Montreal,	Montreal, Q
McAlpine, John J.,	Stanstead Wesleyan Coll.,	Welland, O
McDougall, G. W.,	H. S., Montreal,	Montreal, Q
McGregor, John M.,	H. S., Montreal,	Montreal, Q
McLeod, Norman A. D.,	Pictou Academy,	Lochside, N S
Moore, Levi,	Lachute Academy,	Lachute, Q
Oliver, William,	Huntingdon Academy,	Rockburn, Q
Orton, Richard H.	Guelph Collegiate Inst.,	Guelph, O
Reeves, Arch. C.,	Huntingdon Academy,	Ormstown, Q
Russell, Andrew,	Private Tuition,	Bristol, Q
Tees, John,	H. S., Montreal,	Montreal, Q
Warne, James F.,	Stanstead Wesleyan Coll,	Eastman, Q
Warne, Wm. A.,	Stanstead Wesleyan Coll.,	Eastman, Q
Whyte, George	St. Francis College,	Leeds Village, Q
Whyte, Jas. T,	H. S., Almonte,	Manotick, O
Young, Henry C.,	Barton	North Troy, Vt., U S

THIRD YEAR.

Cameron, John A.,	Huntingdon, Q	Mathewson, George H,	Montreal, Q
Colclough, Wm. F.,	St. Catharines, O	Moore, Saml.,	Mille Isles, Q
Daley, James,	Stouffville, O	Moss, W. T. D.,	Portage la Prairie, Man
Davidson, Peers,	Montreal, Q	Nicholls, Albert G.,	Montreal, Q
Elliott, James A.,	Shawville, Q	Parker, John,	Leeds Village, Q
Elliott, Edward A.,	Ulverton, Q	Paton, W. E.,	Sherbrooke, Q
Finch, C. W.,	Caledonia, O	Reid, William D.,	Maple Hill, Q
Fraser, D. J.,	Alberton, P.E.I.	Richardson, P. L.,	Lyn, O
Fry, Fred. M.,	Montreal, Q	Robertson, Andrew A.,	Montreal, Q
Hall, Alex. R.,	Montreal, Q	Ross, Joseph J.,	Dewittville, Q
Hunter, Alexander,	Bute, Q	Sutherland, Hugh C.,	Embro, O
Kinghorn, H. M.,	Montreal, Q	Swanson, Isaac J.,	Stouffville, Q
McGregor, A. M.,	Montreal, Q	Tolmie, Alexander,	Montreal, Q
McDougall, Robert,	Ormstown, Q	Tory, H. M.,	Montreal, Q
McDuffee, Lewis P.,	Stanstead, Q	Trenholme, Edward C.,	Montreal, Q
McVicar, Donald,	Strathroy, O	Walsh, Alex. W.,	Huntingdon, Q
Mack, Silas W.,	Ayer's Flat, Q		

FOURTH YEAR.

Deeks, W. E.,	North Williamsburg, O	Meighen, F. S.,	Montreal, Q.
Garth, W. H.,	Montreal, Q	Read, F. W.,	Montreal, Q
Gibson, W. D.,	Morrisburg, O	Robertson, James,	Waddington, N.Y., U.S
Holden, Donald B.,	Montreal, Q	Rogers, William,	Lakefield, O
Jamieson, Walter L.,	Montreal, Q	Stevenson, James H.,	South Dummer
McCusker, S. F.,	Hawkesbury, O	Truell, Harry V.,	Stanstead, Q
Mackenzie, R. T.,	Almonte, O	Walsh, Thos. N.,	Ormstown, Q

Partial and Occasional.

[A *Partial Student* may, without passing the Entrance Examination, take the same course as an Undergraduate, and must take at least three classes. Undergraduates and Partials are Matriculated Students. An *Occasional Student* takes less than three classes *Partial Students* are indicated by *]

*Bullock, W. S.,	Roxton Pond, Q	*Kennedy, John,	Conn. Co., Wellington, O
*Caldwell, Henry,	Carney, O		
*Cameron, Henry J.,	Cowansville, Q	*Lambly, M. O.,	Inverness, Q
*Dibb, F. T.,	Montreal, Q	*Lambly, W. D.,	Inverness, Q
*Dixon, James C.	Montreal, Q	*Lord, H. L.,	Grande Ligne, Q
*Dougall, F. E.,	Montreal, Q	*McInnes, J. R.,	
*Eadie, Robert	Sherbrooke, Q	*Morris, John T.,	Whitby, O
*Eaglestone, Joseph,	Montreal, Q	*Oaten, Fred. J.,	Bracebridge, O
*Flagg, Edwin,	Morrisburg, O	*Rankin, John,	Montreal, Q
*Graham, George D.,	Ottawa, O	*Sanderson, Albert E.,	Bowmanville, O
*Judge, Percival E.,	Montreal, Q	*Tener, R.,	Montreal, Q
Ballantyne, R. S.,	Dunbar, O	Maynard, E.	St. Brigide, Q
Biron, M. W.,	Masham Mills, Q	Maynard, Joseph,	St. Brigide Q
Blunt, Forest H.,	Knowlton, Q	Maynard, Moise,	St. Brigide, Q
Bouchard, L. R.,	Sherbrooke, Q	McDiarmid, Archd. H.,	Dornoch, O
Campbell, D.,	Montreal, Q	McLaren, Narcisse,	Chicoutimi, Q
Campbell, Archibald M.,	Montreal, Q	Mitchell, Wm. H.,	Drummondville, Q
Charles, Guillaume,	Montreal, Q	Morison, J. A.,	
Clendinnen, G. S.,	Ottawa, O	Page, Arthur,	
Coffin, James W.,	Montreal, Q	Robertson, David T.,	Madrid, O
Cook, Wm. Archibald,	Montreal, Q	Rollit, Charles D.G.,	Montreal, Q
Fyles, W. B. (B.A.),	Montreal, Q	St. Aubin, T. S.,	Montreal, Q
Giroulx, L.,	Duclos, Q	Sauvé, N. A.,	Hull, Q
Gourlay, J. J. L.,	Carp, O	Scott, M. S.	
Horsey, H. E.,	Kingston, Q	Sullivan, James J.	
Jackson, F. S.,	Montreal, Q	Thompson, John Stuart	
Lloyd, J.			
Baillie, J. E. S.,	Hamilton O	McLeod, John William,	Kirkhill, O
Black, John F.,	Colquhoun, O	*Manning, Charles E M.,	Montreal, Q
Cameron, Malcolm J.		*Mitchell, Thomas A.,	Linder, N.S.
Chantler, William N.,	West Assa	Moore, Churchill,	Economy, Col. Co., N.S.
Cleary, L. R. S.			
Capel, E. T.,	Montreal, Q	Patton, Walter M.,	Montreal, Q
*Humphrey, J. W.,	Cowansville, Q	Tory, James C.,	Guysboro, N.S.
Lee, Wilberforce,	Toronto, O	Tripp, Frederick,	Spenceville, O
MacCallum, Charles A.,	Montreal, Q	Walsh, William E.	
*MacCaskill, D. D.,	Little Narrows, C.B.		
Ashton, John J.,	Newcastle, O	*Long, James A.,	Lavender
Barnes H. T.,	Montreal, Q	Porter, G. H.,	
H rrison, —,		Runions, John W,	Northfield, O
*Hausen, J F.,	Montreal, Q	*Watt, William James,	Montreal, Q
McLeod, —,			
Beattie, W. J. M.,	Mille Isles, Q	Intermoscia, Jerome,	Montreal, Q
Fluhman, E. F.,	Namur, Q		

SPECIAL COURSE FOR WOMEN.

Undergraduates.

FIRST YEAR.

Names.	*School.*	*Residence.*
Angus, Frances R.,	G. H. S., Montreal,	Montreal, Q.
Boright, Mabel,	Sutton Ac.,	Sutton, Q.
Campbell, Kate M.,	G. H. S., Montreal	Montreal, Q
Campbell, R.F.,	McG. Normal School,	Montreal, Q
Craig, Eleanor,	McG. Normal School,	Montreal, Q
Hunt, Louisa E.,	McGill Normal School,	Lennoxville, Q
Leach, Milda,	Misses Symmers & Smith,	Montreal, Q
Lyman, Helen W.,	G. H. S., Montreal,	Montreal, Q
McCoy, Emma C.,	Huntingdon Ac., Q.,	Rockburn, Q
MacDonald, Minnie L.,	G. H. S., Montreal,	Montreal, Q
Pitcher, Ethelwyn	H.S., Morrisburg,	Montreal, Q
Raynes, Ethel,	G H. S., Montreal,	Montreal, Q
Ross, Jessie K.,	G. H. S., Montreal,	Montreal, Q
Tatley, Eleanor,	Private Tuition,	Montreal, Q

SECOND YEAR.

Baillie, Jeanie F.,	Putnam Co., Florida, U.S.	Moffatt, Eva L.,	Gananoque, Q
Hall, Bessie,	Montreal, Q	Mooney, Caroline J.,	Montreal, Q
McGregor, E B.,	(McG.N.S.) Montreal, Q	Patterson, Mary L.,	(McG. N. S.) Clarenceville, Q
McMillan, Helen,	Montreal, Q	Robinson, Maude Alice,	Montreal, Q
Mewhort, Louise,	St Anne, Q	Smith G. Louise,	Montreal, Q

THIRD YEAR.

Abbott Maude M.,	St. Andrew's, Q	Derick, Carrie M.,	Clarenceville, Q
Binmore, Elizabeth,	(McG. N. S.) Montreal, Q	Henderson, Mary J.,	Montreal, Q
Botterell, H. Inez R.,	Montreal, Q	Macfarlane, Mira,	Montreal, Q
Botterell Jeanie T.,	Montreal, Q	Scott, Sarah B.,	Montreal, Q
		Williams, Annie,	Montreal, Q

FOURTH YEAR.

Reid, Helen B.,	Montreal, Q	Wilson, Alice Maud,	Montreal, Q
Squire, Maude M.,	Gananoque, O		

Partial.

Blachford, Agnes C.,	Montreal, Q	Locke, Margaret,	Montreal, Q
Coussirat, Eve J.,	Montreal, Q	McDuffee, Mary E.,	Derby Line, Vt.
De Witt, Emily F.,	Montreal, Q	Mussen, Ethel I.,	Montreal, Q
Finlay, Margaretta,	Montreal, Q	Steene, Henrietta,	Farran's Point
Galt, O.,	Montreal, Q	Robins, L. B.,	Montreal, Q
Holland, Gertrude E.,	Montreal, Q		

Occasional.

Barrie, Jessie,	Morrisburg, O	Campbell, Maude,	Montreal, Q
Bazin, L. C.,	Montreal, Q	Campbell, May,	Montreal, Q
Bazin, M.,	Montreal, Q	Campbell, E. M.,	Montreal, Q
Blake, R.,	Montreal, Q	Campbell, C. J. L.,	Montreal, Q

Cowlie, Emily,	Montreal, Q	Monk, Isa M.,	Montreal, Q
Darling, M. I.,	Montreal, Q	Moyse, Helen,	Torquay, Eng
Dawson, E.,	Montreal, Q	Murray, E. A. P.,	Montreal, Q
Duncan, C. Jane,	Campbelltown, N.B	Norman Charlotte,	Montreal, Q
Evans, Blanche B., B.A.,	Montreal, Q	Power, Florence,	Montreal, Q
Evans, Mabel N.,	Montreal, Q	Radford, Annie E.,	Montreal, Q
Finley, E. M.,	Montreal, O	Richardson, C.,	Montreal, Q
Finley, M. S.,	Montreal, Q	Robertson. Agnes,	Montreal, Q
Fisher, A. R.,	Montreal, Q	Schaiter, Marie,	Montreal, Q
Fisher, Gertrude,	Montreal, Q	Scott, Marguerite L.,	Montreal, Q
Gairdner, P.,	Montreal, Q	Skelton, A. R.,	Montreal, Q
Gault, M. F.,	Montreal, Q	Simms, A. F.,	Montreal, Q
Hunter, Georgina, B.A.,	Montreal, Q	Slessor, Christina,	Montreal, Q
Johnson, E.,	Montreal, Q	Stevenson, W. T.,	Montreal, Q
Johnson, H.,	Montreal, Q	Tatley, H.,	Montreal, Q
Johnson, N.,	Montreal, Q	Thompson, M. W.,	Montreal, Q
Joseph, Carrie,	Montreal, Q	Wand, Mabel	Montreal, Q
Kennedy, L. M.,	Montreal, Q	Warden, Lila,	Montreal, Q
Lamb, L.,	Montreal, Q	Watt, Edith,	Montreal, Q
Macrae, Mabel,	Montreal, Q	Waud, Emily M.,	Montreal, Q
Mattice, Brenda B.,	Montreal, Q	Whitehead, A. Maud,	Montreal, Q
McLea, Rosalie,	Montreal, Q	Wilson, Margaret,	Montreal, Q
McNaughton, M.,	Montreal, Q	Williams, Ella E.,	Montreal, Q
Michaels, N.,	Montreal, Q	Williams, Sarah H.,	Montreal, Q
Mills, Alice,	Montreal, Q	Vipond, M.,	Montreal, Q
Minchin, Louise K.,	Montreal, Q		

MORRIN COLLEGE, QUEBEC.

Undergraduates.

Anderson, Duncan P.,	Levis, Q.	Logie, Edward S.,	Leeds, Q
Arnold, James,	Broughty Fy., Scotland	Macleod, Euphemia,	Quebec
Blue, John H. F.,	Metis, Q.	McCullough, Robert,	Inverness, Q.
Brown, Martha Lucinda,	Quebec	McDonald, Simon,	Quebec
Brodie, Charles E.,	Quebec	McLeod, Thos.,	G.J.McT., Chatham, N.B.
Craig, N. Hugh,	Marlow, Q.	Pidgeon, George Campbell,	Maria, Q.
Desbrisay, Charles T.,	Jacquet R., N.B.	Robertson, Adam,	Edinburgh, Scotland
Fisher, Ethel Wand,	Quebec	Sloane, Edith Jane,	Quebec
Hale, Edward Rupell,	Quebec	Sloane, Samuel T.,	Quebec
Jamieson, David M.,	Inverness, Q.	Smith, George H.,	Hawkesbury, Ont.
Jamieson, William J.,	Inverness, Q.	Tanner, John F. E.,	Levis, Q.
Lindsay John,	Danville, Q.	Webb, Jas. Douglas,	Quebec
Livingston, Neil,	Hampden, Q.	Whitelaw, James Menzies,	Valcartier, Q

Partial Students.

Anderson, Duncan,	Quebec	McCord, Wm. W.,	Quebec
Breakey, Andrew,	Quebec	Meiklejohn, Louisa,	Quebec
Hale, Trevor A.,	Quebec	Russell, Robert,	Quebec
MacNaughton, Frank,	Quebec	Tanner, Olympe M.,	Quebec
McLeod, James St. M.,	Quebec		

ST. FRANCIS COLLEGE, RICHMOND.

Undergraduates.

Bannister, Alex. M.,	Oakland, O	McKenzie, R. J.,	Melbourne, Q
Bayne, N. M.,	Leeds, Q	McLeay, A. A.,	Danville, Q
Bowden, W.,	Richmond, Q	McLeod, A. J.,	Brompton, Q
Dickson, E. H. T.,	Kingsey, Q	Pennoyer, Alex.,	Sherbrooke, Q
Fraser, Hortense C.,	Durham, Q	Wilson, E. K.,	Leeds, Q
McConnell, J. H.,	Drummondville, Q		

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

Adams, W. C.,	Montreal, Q	Murphy, P. J.,	Quebec Q
Bolton, E.,		Pink, L. N.,	
Copeland, L. B.,	Montreal Q	Rutherford, F.,	Montreal, Q
Cunningham, W. N.,		Ryan, A. J.,	
Denis, T.,	France	Simpson, L.,	
Featherston, J. H.,	Montreal, Q	Smart, W. C. G.,	Hamilton, O
Fraser, W. F.,	Pembroke, O	Tasker, G. P.,	Montreal, Q
Klock, A.,	Aylmer, Q	Turner, J. A.,	Hamilton, O
Lawrie, W. P.,	Quebec, Q	Warren, W. H.,	
Le Rossignol, P. H.,	Montreal, Q	Wainwright, J. G. R.	
Mitchell, G.,	New Glasgow, N S		

SECOND YEAR.

Bickerdike, R.,	Montreal, Q	Schwitzer, J. E.,	Ottawa, O
Bulman, W. J.,	Sweetsburg, Q	Stone, E. A.,	Montreal, Q
Middleton, P. H.,	Montreal, Q	Stuart, H.,	Montreal, Q
McCall, A. E.,	Belleville, O	Walker, W. H.,	Montreal, Q
McCrea, G. E.,	Merrickville, O	Wingham, T. H.,	Montreal, Q
Ramsay, H. M.,	Cote St. Antoine, Q	Williams, M. L.,	Montreal, Q
Russell, H. Y.,	Montreal, Q		

THIRD YEAR.

Calvert, S.,	Rockdale, England	Mattice, E. E. S.,	Cornwall, Q
Denison, W. S.,	Denison's Mills, Q	Mooney, G. W.,	Montreal, Q
Ellacott, C. H.,	Cote St. Antoine, Q	Redpath, P. W.,	Montreal, Q
Evans, P. N.,	Montreal, Q	Rexford, O.,	Knowlton Landing, Q
Hawkins, A. H.,	Listowel, O	Reed, C. B.,	Montreal, Q
Jamieson, R. H.,	Montreal, Q	Shuttleworth, A. E.,	Mount Albert, O
Lea, R.,	Crapaud, P E I	Smaill, W.,	Montreal, Q

FOURTH YEAR.

Antliff, J. H.,	Montreal, Q	McLennan, M. J.,	Williamstown, O
Addie, G. K.,	Sherbrooke, Q	Naismith, P. L.,	Pembroke, O
Edwards, G. M.,	Montreal, Q	Strong, A. W.,	Summerside, P.E.I.
Hersey, M. L.,	Montreal, Q	Tuplin, J. P.,	New Annan, P.E.I.
McFarlane, M. C.,	Almonte, O	Young, A.,	Almonte, O

Partial Students.

Brown, J. C.,	Montreal, Q	Purves, J.,	
Cook, G. C.,	Canso, N.S.	Rankine, —	
Costigan, J. S.,	Montreal, Q	Sullivan, J. J. S.,	Montreal, Q
Drummond, A. L.,	Montreal, Q	Stevenson, J. A.,	Valleyfield, Q
Grant, —,		Tighe, J.,	Co. Cavan, Ireland
Hopkins, N. W.,	Hamilton, O	McLeod, N.,	Lochside, N.S

SUMMARY.

Students in Law, McGill College			27
" in Medicine	"		243
" in Arts (Mem)	"	Undergraduates, 123 Partial and Occasional, 82	205
" Special Course for Women—		Undergraduates, 36 Partial, 11 Occasional, 59	106
" in Applied Science,		Undergraduates	58
		Partial	12
" in Arts, Morrin College, Undergraduates and Partials			35
" " St. Francis College, Undergraduates			12
Total number of Students			698
Deduct entered in two Faculties			5
			693
Teachers-in-training in Normal School			98
Total Students			791

School Certificates of the Universities.

STANDING IN THE EXAMINATIONS, 1889.

ASSOCIATES IN ARTS.

I. Candidates under 18 years of age.

No.		
11.	Louis Greenberg (High School, Montreal),	1258 Marks.
12.	Charles C. Gurd (High School, Montreal),	1175 "
34.	Angus R. Mackay (Eliock School, Montreal),	1113 "
70.	James T. Brown (Huntingdon Academy),	1105 "
81.	Alexander Cruikshank (Inverness Academy),	1079 "
33.	Joseph W. A. Hickson (Eliock School, Montreal),	1077 "
6.	William Donahue (High School, Montreal),	1061 "
82.	Edward M. Campbell (Inverness Academy),	1059 "
16.	William M. MacKeracher (High School, Montreal),	1048 "
3.	Alfred T. Bazin (High School, Montreal),	1031 "
127.	Mary Jane Pearce (Girls' Academy, Sherbrooke),	1026 "
27.	Mary A. LeRossignol (Girls' High School, Montreal),	1017 "
85.	Robert J. Hanran (Inverness Academy),	990 "
22.	Jessie Ballantyne (Girls' High School, Montreal),	984 "
103.	Alexander Brodie (High School, Quebec),	969 "
54.	Agnes A. Carter (Cowansville Academy),	960 "
58.	Arthur Burnet (Cowansville Academy),	958 "
72.	Cecil L. Brown (Huntingdon Academy),	953 "
18.	Albee A. Skeels (High School, Montreal),	930 "
24.	Margaret Craig (Girls' High School, Montreal),	
57.	Percy H. Gregory (Cowansville Academy),	928 "
10.	Alfred W. Gifford (High School, Montreal),	916 "
129.	F. Nellie Brown (Girls' Academy, Sherbrooke),	914 "
4.	Leslie H. Boyd (High School, Montreal),	912 "
111.	Sydney M. Dickson (St. Francis Coll. School, Richmond),	907 "
126.	Jennie Rugg (Girls' Academy, Sherbrooke),	903 "
5.	James Cox (High School, Montreal),	895 "
56.	Lucy A. Oliver (Cowansville Academy),	872 "
128.	Florence Moy (Girls' Academy, Sherbrooke),	871 "
74.	John McGerrigle (Huntingdon Academy),	870 "
145.	George F. Allen (Waterloo Academy),	869 "
148.	William T. Freeland (Waterville Model School),	868 "
14.	George W. Henderson (High School, Montreal),	864 "
43.	Mary L. Bush (Clarenceville Academy),	856 "
13.	John J. Hamilton (High School, Montreal),	833 "

75.	Rosalind Watson (Huntingdon Academy),	832 Marks,
28.	Gracie H. Tickle (Girls' High School, Montreal),	827 "
134.	Charles H. Mansur (Stanstead Wesleyan College),	823 "
55.	William F. Carter (Cowansville Academy),	821 "
132.	Ethel L. Gale (Stanstead Wesleyan College),	806 "
112.	Harriet A. Fraser (St. Francis Coll. School),	805 "
21.	Marion Evelyn Antliff (Girls' High School, Montreal),	802 "
79.	John W. Blackett (Huntingdon Academy),	801 "
88.	Barbara A. Brown (Inverness Academy ,	
15.	Ernest Linton (High School, Montreal),	792 "
32.	Ella May Sicotte (Misses Symmers & Smith's School, Montreal)	789 "
104.	Edward J. C. Chambers (High School, Quebec),	789 "
31.	Blanche Spence (Misses Symmers & Smith's School),	783 "
131.	Jennie Mills (Stanstead Wesleyan College),	779 "
60.	Alice L. Selby (Dunham Academy),	773 "
78.	Frederick S. Spearman (Huntingdon Academy),	772 "
133.	May Henderson (Stanstead Wesleyan College),	760 "
87	Peter McKenzie (Inverness Academy),	755 "
23.	Isabel E. Brittain (Girls' High School, Montreal),	751 "
80.	John McMullan (Huntingdon Academy),	742 "
59.	Nellie F. Selby (Dunham Academy),	741 "
26.	Jennie Hughes (Girls' High School, Montreal),	733 "
61.	Julia S. Clement (Dunham Academy),	707 "
64.	Annie E. McDonald (Gould Model School),	685 "
116.	J. Armitage Ewing (St. Francis Coll. School),	679 "
47.	Fannie E. Baldwin (Coaticook Academy),	653 "
9.	Frank C. Fraser (High School, Montreal),	647 "
17.	Arthur W. K. Massey (High School, Montreal),	609 "
48.	Laura L. Foster (Coaticook Academy),	482 "

II. Candidates over 18 *years of age.*

73.	John A. McMaster (Huntingdon Academy),	937 "
84.	William S. Johnson (Inverness Academy),	913 "
69.	Margaret B. Walker (Huntingdon Academy),	906 "
108.	Catherine M. M. Howard (St. Francis College School),	880 "
105.	Isabella Brodie (Girls' High School, Quebec),	873 "
115.	Theresa F. Bannister (St. Francis College School),	861 "
49.	Henrietta E. Keough (Coaticook Academy),	838 "
144.	Annie M. Warne (Waterloo Academy),	746 "
36.	Carrie M. Sulis (Girls' High School, St. John, N.B.),	714 "
121.	Lionel Hodgins (Shawville Academy),	704 "

62.	Agnes M. Johnson (Dunham Academy),	690 Marks.
149.	Elizabeth J. Ball (Waterville Model School),	686 "
25.	Effie S. Gurd (Girls' High School, Montreal),	676 "
124.	William E. Morehouse (Sherbrooke Boys' Academy),	649 "
118.	Robert McMorine (St. Francis College School),	619 "
42.	Hannah M. McLean (Girls' High School, St. John, N.B.),	576 "
40.	Helen E. Burns (Girls' High School, St. John, N.B.),	570 "
38.	Zebie F. Murray (Girls' High School, St. John, N.B.),	566 "

JUNIOR CERTIFICATES.

I. Under 18 years of age.

130.	Margaret McLellan (Girls' Academy, Sherbrooke),	565 "
65.	Louisa H. Chalmers (Granby Academy),	456 "

II. Over 18 years of age.

67.	Howard L. Hindley (Granby Academy),	437 "

McGILL UNIVERSITY, MONTREAL.

The following candidates have passed the Examinations required for Matriculation.

I. In Arts.

Allen, George F.,	Waterloo, Q
Armitage, Wm. D.,	Shawville, Q
Baldwin, Fannie E.,	Coaticook, Q
Ballantyne, Jessie,	Montreal, Q
Brodie, Alex.	Quebec, Q
Brown, Cecil L.,	Port Lewis, Q
Brown, F. Nellie,	Lennoxville, Q
Brown James T.,	Huntingdon, Q
Burnet, Arthur,	Farnham Centre, Q
Bush, Mary L.,	Clarenceville, Q
Carter, Agnes A.,	Cowansville, Q
Carter, Wm. F.,	Cowansville, Q
Chambers, Ed. J. C.,	Quebec, Q
Chilcott, Thos. E.,	Burford, O
Darling, Robt.,	Dartford, O
Dickson, Sydney M,	Trenholmville, Q
Donahue, Wm.,	Montreal, Q
Draper, Benj. B.,	Listowel, O
Foster, Laura L.,	Coaticook, Q
Fraser, Harriet A.,	Richmond, Q
Gale, Ethel L.,	Quebec, Q
Gregory, Percy H.,	Cowansville, Q
Gurd, Chas. C.,	Montreal, Q
Hamilton, John J.,	Montreal, Q
Henderson, May,	Stanstead, Q
Hickson, Jos. W. A.,	Montreal, Q
Hodgins, Lionel,	Shawville, Q
Howard, Catharine M. M,	Windsor Mills, Q
Johnson, Wm. S.,	Clapham, Q
Johnston, Agnes M.,	Dunham, Q
Keough, Henriette E.,	Coaticook, Q
LeRossignol, Mary A.,	Montreal, Q
McDonald, Annie E.,	Gould, Q
McGerrigle, John,	Ormstown, Q
MacKeracher, Wm. M.,	Montreal, Q
McMaster, John A.,	Huntingdon, Q
Mansur, Chas. H.,	Stanstead, Q
Moffatt, David S.,	Irvine, Q
Moy, Florence,	Sherbrooke, Q
Naylor, Harry A.,	Shawville, Q
Oliver, Lucy A.,	Cowansville, Q
Pearce, Mary Jane,	Lennoxville, Q
Rugg, Jennie,	Sherbrooke, Q
Selby, Nelly F.,	East Dunham, Q
Simpson, Andrew R.,	Guelph, O
Skeels, Albee A.,	Montreal, Q
Spence, Blanche,	Montreal, Q
Tickle, Gracie H.,	Montreal, Q
Walker, Margaret B.,	Huntingdon, Q
Watson, Rosalind,	Huntingdon, Q
Whiteside, Orten E.,	Metcalfe, O

II. In Applied Science.

Bazin, Alfred T.,	Montreal, Q	Hanran, Robt. J.,	Inverness, Q
Blackett, John W.,	Huntingdon, Q	Henderson, Geo. W.,	Montreal, Q
Boyd, Leslie H.,	Montreal, Q	Howe, Ralph E.,	St Johns, Q
Campbell, Ed. M.,	Inverness, Q	Jordan, John E.,	Coaticook, Q
Cox, James,	Montreal, Q	Linton, Ernest,	Montreal, Q
Cruikshank, Alex.,	Inverness, Q	Mackay, Angus R.,	Montreal, Q
Ewing, J. Aimitage,	Richmond, Q	McKenzie, Peter,	Inverness, Q
Foster, Goldwin,	Montreal, Q	McMorine, Robert,	Richmond, Q
Fraser, Frank C.,	Montreal, Q	McMullan, John,	Ormstown, Q
Freeland, Wm T.,	Waterville, Q	Morehouse, Wm. E.,	Sherbrooke, Q
Gifford, Alfred W.,	Montreal, Q	Spearman, Fred. S.,	Huntingdon, Q
Greenberg, Louis,	Montreal, Q		

STANDING IN THE SEVERAL SUBJECTS.

[The numbers correspond with those in the preceding list. Candidates whose numbers are in parentheses are equal in standing. Those preceding an asterisk have obtained at least two-thirds of the marks, those following at least one-third. Numbers 1-19 are from the Montreal High School; 21-28 from the Girls' High School, Montreal; 31, 32 from Misses Symmers and Smith's School, Montreal; 33, 34 from Eliock School, Montreal; 35 Private Tuition; 36-42 from Girls' High School, St. John (N.B.); 43-46 from Clarenceville Academy; 47-52 from Coaticook Academy; 53 from Compton Ladies' College; 54-58 from Cowansville Academy; 59-63 from Dunham Academy; 64 from Gould Model School; 65-68 from Granby Academy; 69, 70, 72-76, 78-80 from Huntingdon Academy; 81-88 from Inverness Academy; 89 from Knowlton Academy; 90-98 from Lachute Academy; 99, 100 from Lacolle Academy; 103, 104 from High School, Quebec, 105, 106 from Girls' High School, Quebec; 107-118 from St. Francis College School, Richmond; 119-123 from Shawville Academy; 124, 125 from Boys' Academy, Sherbrooke; 126-130 Girls' Academy, Sherbrooke; 131-134 from Stanstead Wesleyan College; 135-137 from High School, St. Johns; 139-147 from Waterloo Academy; 148-151 from Waterville Model School.]

1. *Preliminary,*

Reading.—[At Montreal —27, 23, (16, 22), (6, 12, 24, 25, 32), (26, 28, 31), (4, 7, 11, 21, 33, 35), (3, 14, 15), (8, 13), (5, 9, 10, 17, 18, 19, 34)]. [At Clarenceville.—43. 44, 46, 45]. [At Coaticook.—49, (50, 52), (47, 48, 51)]. [At Compton.—53]. [At Cowansville.—54, (55, 56, 57, 58)]. [At Dunham.—(60, 63), (59, 61), 62], [At Granby.—(67, 67, 68], 66]. [At Huntingdon. —(75, 76), (70, 72, 73, 74, 78), (79, 80)]. [At Inverness.— 87, (81, 83, 88), (82, 85, 86), 84]. [At Knowlton.—89]. [At Lachute.—97, (90, 96), 95, (93, 94), (91, 92, 98)). [At Lacolle.—(99, 100)]. [At Quebec, Boys.—(103, 104); Girls.—105, 106]. [At Sherbrooke.—(64, 128), 127, (126, 129, 130), 124]. [At Stanstead.—(131, 132, 133), 134]. [At St. Johns.—(135, 137), 136]. (At Waterloo.—146, (140, 141, 144), 147, 145, 139, (142, 143)]. [At Waterville.—149, 150, 148, 151].*

Writing.—(3, 4, 9, 11, 12, 13, 19, 22, 24, 32, 36, 38, 39, 40, 44, 50, 58, 60, 61, 66, 69, 72, 75, 79, 88, 103, 110, 111, 117, 120, 121, 122, 127, 131, 135, 136, 137, 141, 142, 147, 148, 149), (10, 21, 23, 26, 28, 41, 45, 47, 49, 51, 52, 53, 56, 68, 70, 74, 80, 85, 89, 105, 112, 114, 124, 125, 132, 133, 146, 150, 151), (25, 27, 31, 34, 37, 42, 43, 46, 48, 54, 55, 59, 62, 64, 76, 83, 89, 98, 116, 126, 134)*, (8, 15, 16, 18, 33, 57, 63, 73, 78, 81, 82, 84, 86, 90, 92, 95, 97, 100, 106, 108, 109, 115, 119, 123, 128, 129, 130, 144, 145), (5, 7, 14, 17, 65, 67, 87, 91, 93, 94, 96, 104, 107, 113, 118, 139, 140 143.)

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From the Victoria Institute, London:—Journal of Transactions. Vol. XX 1888.
From Edinburgh University, Calendar for 1888-89.

From Sir J. W. Dawson—National Perils and Opportunities (Discussions of the Evangelical Alliance); Debrett's Baronetage, Knightage, &c., 1885; Modern Science in Bible Lands; The Reign of Causality, by Professor Watts; Ontario Gazetteer and Directory, 1888-89.
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From the Society of Engineers, London—Transactions for 1887.

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From Dr. T. Sterry Hunt—American Journal of Science, Vols. I. to L., 50 volumes.

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From the Provincial Secretary, Quebec—Jugements et Délibérations du Conseil Souverain de la Nouvelle-France, 1883.

From the Institution of Civil Engineers, London Proceedings, Vol. XCIII.; Minutes of Proceedings, Vol. XCIV.

From the Geological Survey, Ottawa—Annual Report, Vol. II., 1886; maps to accompany the Report.

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From the University of Sydney, N.S.W.—Calendar for 1888.

From the Victoria University, Cobourg, Ont.—Calendar for 1888-89.

From the Smithsonian Institution, Washington—Miscellaneous Collections, Vols. XXXII. and XXXIII.

From the American Institute of Mining Engineers—Transactions, Vol. XVI., 1888.

From Her Majesty's Government, per the Under Secretary of State, Ottawa—Report of the Scientific Results of the Exploring Voyage of H. M. S. Challenger; Zoology, Vol. XXVI.

From the Provincial Government, Quebec—Arrêtés en Conseil ayant Force de la Loi dans la Province de Québec, 1888; The same in English.

From the Lieutenant-Governor of Bengal—The Species of Ficus of the Indo-Malayan and Chinese Countries, parts 1 and 2.

From the U.S. Geological Survey, Washington—Atlas to accompany a Monograph on the Geology and Mining Industry of Leadville, Col.

From the American Society of Mechanical Engineers—Transactions of the Society, Vol. IX., 1888.

From the Geological and Natural History Survey, Ottawa—Catalogue of Canadian Plants, Part 4.

From Henry Mott—Speeches of John Bright, M.P., 2 vols.

From the Cobden Club, London—The Political Writings of Richard Cobden; Free Trade *versus* Fair Trade; Local Government and Taxation in the United Kingdom; Richard Cobden, by Richard Gowing; Life of Richard Cobden, by John Morley, and fifteen of the Society's publications in paper covers.

From the Nova Scotian Institute of Natural Science, Halifax—Proceedings and Transactions, 1887-88.

From the Imperial Academy of Sciences, St. Petersburg—Bulletin de l'Académie, 1888.

From the Owens College, Manchester—Calendar for 1888-89.

From the United States Government, Washington—Volumes XVII. and XIX. of the United States Census, 1880.

From the Palestine Exploration Fund—The Survey of Western Palestine; A General Index to the seven volumes already published.

The Geological Survey of Philadelphia, Annual Report for 1886, 1 volume; Atlas to accompany do, 1 vol.; Atlas Northern Anthracite Field, 1 vol.; Atlas Eastern Middle Anthracite Field, 1 vol.

R. J. Wicksteed, Ottawa, Sessional Papers British Columbia, 1888, 1 volume; Parliamentary Debates, Statutes, etc., 33 volumes.

John C. Smith, Brooklyn, Culmination of the Science of Logic, 1 vol.; Atlas Eastern Middle Anthracite Field, 1 vol.

Trustees of the British Museum—Catalogue of Birds, Vol. XIV., 1 vol.; Catalogue of Fossil Reptilia, 1 vol.

Dominion Government, Ottawa—Report of the Meteorological Service for 1885, 1 vol.; Sessional Papers, 3 vols.; Appendices to the Journals House of Commons, 1888, 2 vols.; Statuts du Canada, 51 Vict., 1888, 1 vol.; The Colonial Office List for 1888, 1 vol.

American Society of Civil Engineers—Transactions of the Society, July, 1888, 1 volume.

The Graduates Society—The English in the West Indies, 1 vol.; The Government Year Book, 1888, 1 vol.; Sam Slick, the Clockmaker, 1 vol.; Lindley on Partnership, Vol. I., 1 vol.

The Royal Society of London—Philosophical Transactions of the Society, 1887, 2 vols.

John De Soyres, St. John, N.B.—The Provincial Letters of Pascal, 1 vol.

Henry Mott—The Sophisms of Protection, by F. Bastiat, 1 vol.

Macmillan & Co., London—Latin Reader for the Lower Forms of Schools, 1 vol.; First Greek Reader, "Stories and Legends," 1 vol.; First Greek Grammar, 1 vol.; Exercises in Greek Accidence, 1 vol.; First Course of French Composition, 1 vol.; Latin Lyric Verse Composition, 1 vol.; Selections from Attic Orators, 1 vol.; Republic of Plato, 1 vol.

H. M. Government, per the Under Secretary of State—Report of the Cruise of H.M.S. Challenger, Vols. XXIII. to XXVIII., 6 vols.

Provincial Government of Quebec, Journals of the Legislative Assembly, 2 vols.; Journals of the Legislative Council, 1 vol.; Index to Sessional Papers, No. 21, 1 vol.

Geo. M. Dawson, Ottawa—Report on the Great Mackenzie Basin, 1 vol.

Francis McLennan and others—Stephani Thesaurus Linguæ Græcæ, 5 vols.; Appendix ad Thesaurum, 2 vols.

H. M. Government, per the Under Secretary of State, Great Trigonometrical Survey of India, Vol. X., 1 vol.

Edmond Lareau, the author—Histoire du Droit Canadien, Vol. II., 2 copies, 2 volumes.

From the Government, Sydney, N.S.W.—Annual Report of the Department of Mines, 1887, 1 vol.; Mineral Products of N.S.W., &c., 1 vol.

The Bureau of Education, Washington, U.S.—Report of the Commissioner for 1882-83, 1 vol.; Report of the Commissioner for 1886-87, 1 vol.

Geological Survey of New Jersey—Topography and Climate, Vol. I., 1888, 1 volume.

Astronomer Royal, Greenwich—Greenwich Observations, 1886, 1 vol.; Cape Meridian Observations, 1882 to 1884, 1 vol.

Miss Ramsay—Canadian History, 1760-1775, by the late R. A. Ramsay, 1 volume.

Also the following books in paper covers, and pamphlets:

Sir J. W. Dawson—Table of Canadian Birds, by Chamberlain.

Professor Bovey—Proceedings of the Engineers' Club, Philadelphia; Proceedings of the Institution of Mechanical Engineers, 3 Parts.

Royal Society of London—List of the Council and Fellows.

Laval University—Annuaire de l'Université, 1888-89.

Yale University—Catalogue for 1888-89.

The Imperial University of Japan—Journal of the College of Science, Vol. II., Part IV.; Calendar for 1888-89.

Miss C. A. Baker, Cambridge, Mass.—"The Old New World"—an account of the Hemenway Expedition, 1887-88.

Mr. John H. R. Molson—The Butterflies of the Eastern United States and Canada, Parts I., II. and III.

War Department, Washington, U.S.—Weather Maps for November and December.

Alexander Agassiz—Report of the Curator of the Museum of Comparative Zoology, Harvard College.

University of Vermont—Catalogue of the University, 1888-89.

Rennselaer Society of Engineers, Troy, N.Y.—Selected Papers, Vol. I., No. 5.

Harvard University—Catalogue for 1888-89.

Imperial University of Japan—See ante.

Superintendent of Education, P.E.I.—Report of the Public Schools of P.E.I. for 1887.

The Astronomer Royal, Greenwich—Annuals of the Cape Observatory, Vol. II., Part 2.

The director of the United States Mint—Report on the production of the precious metals, 16th annual report, 1888.

McGill College Graduates Society—Laws and Usages of Parliament.

Toronto University—Examination papers, 1888.

Chief of Engineers, United States Army—Annual report, 1888, in 4 vols.

Provincial Government, Quebec—Revised Statutes, 1888, 2 vols.; the same in French, 2 vols.; Sessional papers, vol. 21, 2 parts.

Sir J. W. Dawson—Twenty-second report of the trustees of the Peabody museum; Vital Questions, 1888.

Douglas Brymner, Ottawa—Report on Canadian Archives, 1888.

Miss S. B. Fay, Boston—Expeditions of Capt. John Lovewell against the Indians, 1725.

Master Car Builders' Association, N.Y.—Proceedings of the 22nd convention, 1888.

Albert J. Hill, New Westminster, B.C.—Photograph of a deed dated July 1789, Signed by Joseph Brant and other Indian chiefs.

Merchant Venturers' School, Bristol—Prospectus of the school, 1888-89.

United States Geological Survey—Mineral resources of the U.S. Bulletin, S. G. Survey, 8 parts.

University of Rochester, N.Y.—Catalogue for 1888-89.

Trinity College, Toronto—Calendar for 1889.
University of Madrid—Calendar for 1887-8.
H.M. Government, per the Under Secretary of State—Report of H.M.S. "Challenger," Zoology, 3 vols.
Dublin University—Calendar for 1889; Examination papers for 1889.
Canterbury College, New Zealand—Calendar for 1889.
Parliamentary Library, Ottawa—Annual supplement to the catalogue.
Sir Edwin Chadwick, C.B.—The Health of Nations; 2 vols.
J. Theo. Robinson—Starke's almanac, 1889; 2 copies.
Chief Signal Officer U.S. War Department, Weather maps for January and February.
Warner Observatory, Rochester, N.Y., history and work of the Observatory.
University of Lincoln, Nebraska, University studies, vol. 1, part 2.
H. M. Government, per the Colonial Office, Colonial Office list for 1889.
Board of Railroad Commissioners, Boston, Mass., 20th annual report, 1889.
Superintendent of Education, Nova Scotia, annual report, 1889.
Toronto Public Library, reference catalogue, 1889.
Institution of Civil Engineers, minutes of proceedings, vol. 95.
Lick Observatory, California, publications of the Observatory, vol. 1.
New York State library—Library Reports, 70th and 71st; Regent's reports, 3 vols.; State Museum report; Natural History report, palæontology, vol. 7; Bulletins of State Museum, 5 parts.
Dr. A. H. Strong, Rochester, N.Y.—Systematic Theology, Philosophy and Religion. 2 vols.
United States Government—Census of the United States, vols. 21 and 22.
Superintendent of Education, N.B.—Annual report, 1888.
Government of Nova Scotia—Twelve Blue books, parliamentary.
Harbor Commissioners of Montreal—Annual report, 1888.
Superintendent of Public Instruction, Quebec—Report for 1887-88.
The Dowager Lady Vernon—A superb edition of Dante in four volumes, edited by the late Lord Vernon.
From the McGill College Book Club—The Classic Poets, by W T. Dobson; Esther, by C. DeKay; Marino Faliero and A Midsummer Holiday, by Swinburne; A Shadow of Dante; The Poet's Beasts; Fly Rods and Fly Tackle; Sport, by W. Bramley-Davenport; Fourteen Years with Adelina Patti; My Musical Life, by Haweis; The Great Musicians, Mendelssohn; Letters of Jane Austen, 2 vols.; Some Literary Recollections, by James Payn; Yesterdays with Authors; Obiter Dicta, by A. Birrell; Acadia, by Philip H. Smith; Labrador, by W. Alden Stearns; Life and Labor in the Far Far West; Montcalm and Wolfe, by Parkman, 2 vols.; Home Studies in Nature; Sagacity and Morality in Plants; Animal Life, by Frank Buckland; Ancient Cities of the New World; Pre-Historic America; Among the Indians of Guiana; Algonquin Legends of New England; Spanish Legendary Tales; Circulating Capital; Elements of Political Economy; Study of Political Economy; The Land and the Laborer; Profit Sharing; American Political Ideas; The Distribution of Products; Life of Lord Beaconsfield; Life and Letters of Bayard Taylor, 2 vols.; Countess of Albany; Louis Pasteur, his Life and Labors; Life and Letters of James Hinton; Cruise of H. M. S. Bacchante, 2 vols.; Across the Pampas and the Andes; The River Column; Via Cornwall to Egypt; A Lady's Ride Across Honduras; On Tuscan Hills and Venetian Waters; A Naturalist's Wanderings in the Eastern Archipelago; In the Lena Delta, by Geo. W. Melville; Round the World, by A. Carnegie; My Reminiscences, 2 vols., by Lord Ronald Gower; Croker's Correspondence and Diaries, 2 vols.; People I Have Met, by Grenville Murray; Caroline Fox, her Journals and Letters, 2 vols.; Diary and Letters of Thomas Hutchinson; Reminiscences, chiefly on Towns, Villages and Schools, 2 vols.;

Reminiscences o' Court and Diplomatic Life; Chinese Gordon, by Archibald Forbes; Souvenirs of Some Continents; Recollections of Dean Stanley; Stanley's Memorialsof Canterbury; Memoirs of Mark Pattison; Letters to Guy, by Lady Barker; Military Manners and Customs; Reminiscences of Military Service; Rome Pagan and Papal, by Margaret Brock; Hayti, or the Black Republic; Old Mexico and Her Lost Provinces; French Revolution, Vol. III, Taine; Gustavus Adolphus, by John L. Stevens; Ireland Under the Tudors, 2 vols.; Text-Book of Geology, by Geikie; The Art of Decoration, by Mrs. Haweis; Decorations and Furniture of Town Houses; Descartes, by J. P. Mahaffy; Scheling's Transcend ntal Idealism; Social Philosophy of Comte, by E. Caird; A Sudy of Origins, by E. M. Pressence; Ecclesiastical History, 2 vols., by W. Fitzgerald; Native Religions of Mexico and Peru; Sermons and Addresses in America, by Farrar; Hearty Services, by Rev. J. G. Norton; Continuity of Christan Thought; Esoteric Buddhism; Modern Theories in Philosophy and Religion; Life in Nature, by James Hinton; Animal Locomotion, by Dr. Pettigrew; England Under Gladstone, 1880-1884; Scenes in the Commons, by D. Anderson; The Pyramids and Temples of Gizeh; the Chevalier d'Eon de Beaumont; Incdents and Anecdotes of the Civil War; The Creoles of Louisiana, by Cable; The Coming Struggle for India, by Vambery; Paradise Found, by W. F. Warren; Afghanistan and the Anglo-Russian Dispute; America Revisited, by G. A. Sala; The Rescue of Greely; Writings by the Way, by J. Campbell Smith; The law Breaker, by James Hinton; Episodes of My Second Life, by A. Gallenga; The Sea Fisherman, by J. C. Wilcocks; Summer, by H. D. Thoreau; Eary Spring in Massachusetts; Dutch Pictures, by G. A. Sala; Sea Life Sixty Years Ago, by Capt. Bayly · At Home in Italy; The Power and Authority of School Officers and Teachers—116 volumes and 67 parts of magazines.

DONATIONS TO THE PETER REDPATH MUSEUM

FOR THE YEAR ENDING APRIL, 1888.

From Mr. Henry M. Ami, M.A., F.G.S., Ottawa—Specimen of "Mountain Cork" from the Emerald Mine, Buckingham, P.Q.

From the Geological Survey, Ottawa, through Prof. Macoun—Two collections of Canadian Plants.

From Mr. G. F. Matthew, F.R.S.C., St. John, N.B.—Casts of Paradoxides lamellosus and Paradoxides pontificalis.

From Mr. D. A. Ansell, Mexican Consul, Montreal—Three figures in stone and ivory, and an obsidian implement, from Mexico.

From Mr. J. W. Warwick, Buckingham, P.Q.—Large specimen of "Mountain Cork" from the Emerald Mine, Buckingham, P.Q.

From Mr. W. J. Giles, Montreal—Specimen of Spirobolus marginatus.

From Mr. W. T. Gunn, Montreal—Collection of Birds' eggs, shells, etc.

From Sir William Dawson—Collection of Fossil Sponges from Little Metis, Que.

From Mr. W. C. McDonald, 70 glazed cases to contain the Bowles collection of insects previously presented by Mr. McDonald.

From Mr. Percy Dawson—Specimen of *Spectrum femoratum*.

From Mr. Fredk. Hague—Specimen of Duck and Baltimore Oriole.

From Mr. E. T. Chambers—Flint Knife from Aylwin, P.Q.

From Dr. G. M. Dawson—Four Crystals Titanite, Sebastopol, Ont.

From Mr. R. Brown—Fossil Plants coal formation, C. Breton.

From Lt.-Col. Grant—Specimens Silurian Fossils.

From U. S. Fish Commission—Biological Papers.

From Mr. E. T. Chambers, Montreal—Collection of fossils from Lake St. John, P.Q.

From Mr. A. G. Stanton, of Lancaster, Ont., and Mr. A. McNoun, of River Beaudette—Collection of Pleistocene fossils from River Beaudette.

From Miss Eliza V. Sankey, Kingstown, Ireland—Specimens of Oldhamia from Brayhead.

From Mrs. Adams, Montreal—Specimen of living wax plant (Hoya Carnosa).

From Mr. John Molson, Montreal—Two large century plants (Agave Americana).

Mr. A. W. Walsh, Ormstown—Specimen of girdled tree.

Mr. Andrew Young, Almonte—Concretionary cylinders from Potsdam Standstone.

Mr. W. F. Ferrier, B.A.Sc., Montreal—Specimen of calamine from Wiesloch, Baden, Germany.

Dr. Harrington, Montreal—Indian relics from Lytton, British Columbia; specimens of Northwestern coals, etc.

Dr. Darey, Montreal—Specimens of Silurian fossils.

E. P. Mathewson, B.A.Sc., Pueblo, Colorado—Minerals from Colorado.

From Mr. R. G. Fowler, Montreal—Vegetable sponge (Luffa Œgyptiaca) from Japan.

From Mr. G. McDougall—Plants encrusted with calcite from Moosomin, Assa.

From Mrs. Duncan Bell—Nest of Wolf Tarantula from Mexico.

From Mr. P. L. Naismith, Montreal—Slab showing worm burrows from the Calciferous, St. Anne, P.Q.

From Mr. W. F. Ferrier, B.A.Sc.—Specimen of Sphæroidlerite in Basalt from Steinheim, near Hanau, Hesse, Germany.

From Mr. J. A. Mathewson Montreal—Sigillaria from Cape Breton.

From Mr. E. T. Chambers, Montreal—Specimen of altered bitumen from Point Levis.

From Dr. T. Wesley Mills, Montreal—Mounted skull of Muskrat.

From Dr. M. S. Wade, Clinton, British Columbia—Prepared fruit of Shepherdia Canadensis.

From Dr. Harrington, Montreal—Specimen of rain-marks rom the Valley of the Fraser River, British Columbia.

From Mr. Thos. N. Walsh, Ormstown, P.Q.—Slab with specimens of *Ophileta compacta*.

From Mr. W. E. Deeks, North Williamsburg, Ont.—Specmens of Viburnum lentago.

From the Geological Survey, Ottawa, Ont., through Prof Macoun—Collections of Canadian plants.

From estate Sir W. E. Logan—Specimens of rocks from the Eastern Townships and Lake Huron.

From Mr. Francis L. Sperry, Sudbury, Ont.—Specimen of Sperrylite, an interesting mineral recently found at the Vermillon mine, Algoma.

From Mr. R. Freeland, Waterville, Que.—Collection of insects and reptiles from Alabama.

From Mr. N. Evans—Specimen of *Clytus ruricola* in wood.

From Dr. Beeman, Ernestown, Ont.—Specimen of *Orthoceras Bigsbii*.

From Mr. J. C. Badgley, Montreal—A valuable collection of West Indian birds.

From Mr. W. T. Skaife, B.A.Sc., Montreal—Collection of sugars.

From Mr. R. D. Lacoe, Pittston, Pa.—Specimens of Fossil plants.

From Mr. Ernest G. Craven, Assoc. M. Inst. C.E.—Two specimens of garnet (cut).

From Dr. G. M. Dawson and Dr. Harrington—Specimens of jade and allied substances from British Columbia.

Observatory.

Latitude, N. 45° 30′ 17″. Longitude, $4^h\ 54^m\ 18^s\ 55$.
Height above sea level 187 ft.

Superintendent.—C. H. McLeod, Ma.E.
Assistant Superintendent.—G. H. Chandler, M.A.
Assistant.—E. H. Hamilton, B.A.Sc.

Meteorological Observations are made every fourth hour, beginning at $3^h\ 0^m$ Eastern standard time; also at $8^h\ 0^m$ and $20^h\ 0^m$. Independent bi-hourly temperature observations are also made. The principal instruments employed are the following:—Two standard mercurial barometers; one Kew standard thermometer; two Pastorelli thermometers; one maximum thermometer; one minimum thermometer; one set of six self-recording thermometers, with controlling clock, battery, etc.; two anemometers; one wind vane (wind-mill pattern); one anemograph, with battery, etc.; one sunshine recorder; one rain-band spectroscope; one rain gauge; and several spare thermometers.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile north-west of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

The Astronomical Equipment consists of:—The Blackman Telescope (6¼ in.); a photoheliograph (4½ in.); a 3¼ in. transit, with striding level; two 2 in. transits, arranged as collimating telescopes; one sidereal clock; one mean-time clock; one sidereal chronometer; one mean-time chronometer; one chronograph; batteries, telegraph lines and sundry minor instruments.

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock signals, and the fire alarm bells; and to the country, through the telegraph lines

Observations of sun spots, for position and area, are made with the Blackman telescope and the photoheliograph.

The Blackman telescope is also employed in occasional work and for educational purposes.

University Gymnasium.

Instructor.—JAMES NAISMITH, B.A.

The classes, which are open to Students of all the Faculties, will meet at the University gymnasium, at hours to suit, as far as possible, the convenience of Students, and which will be announced at the commencement of the Session.

THE WICKSTEED SILVER AND BRONZE MEDALS FOR PHYSICAL CULTURE (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the graduating class, and to students who have had instruction in the gymnasium for two sessions; the silver medal to the former, the bronze medal to the latter.

The award of these medals is made by Judges, appointed by the Corporation of the University.

Every competitor for the silver medal is required to lodge with the Judges, before the examination, a certificate of good standing in the graduating class, signed by the Dean or Secretary of the Faculty to which he belongs, and the medal will not be awarded to any student who may fail in his examination for the degree.

University Societies.

THE GRADUATES' SOCIETY OF McGILL UNIVERSITY

INCORPORATED 1880.

OFFICERS FOR 1889-90.

President:

C. J. FLEET, B.A., B.C.L.

Vice-Presidents:

DR. T. WESLEY MILLS, W. J. SPROULE, B.A. Sc., and A. FALCONER, B.C.L.

Secretary:

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UNIVERSITY LITERARY SOCIETY.

ESTABLISHED 1869.

OBJECTS.—The encouragement of Literary and Scientific pursuits, and the promotion of self culture among the members.

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UNDERGRADUATES' LITERARY SOCIETY.

CONSTITUTED 1880.

The object of this Society is the mutual improvement of its members, by means of debates, essays, readings, &c. The Society is open for membership to all students attending the classes in any of the Faculties of McGill College:

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2nd Vice-President: W. R. ELLENWOOD.
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McGILL COLLEGE YOUNG MEN'S CHRISTIAN ASSOCIATION.

OBJECT.—To unite in an Association all who are interested in the cause of religion, for the purpose of mutual help in the Christian life, and for the promotion of good morals and Christian living in the College.

MEMBERSHIP.—Open to Students of all the Faculties. Membership is of two kinds: Active—Open to a member of an Evangelical church; Associate—Open

to any young man of good moral character. A social reception is given to new students at the beginning of the session.

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SIR J. W. DAWSON, LL.D.

President:
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Membership.
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Missionary.
JAS. TAYLOR.

Social.
A. R. HOLDEN.

Music.
A. G. NICHOLS.

Bulletin.
W. W. ALEXANDER.

McGILL UNIVERSITY ATHLETIC ASSOCIATION.

ESTABLISHED 1884.

Open for membership to undergraduates in this University.

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Treasurer:
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Secy.: M. F. LUCAS.

McGill Hockey Club.
Secy.: D. B. HOLDEN.

McGill Cricket Club.
Secy.: F. W. HIBBARD, B.A.

Annual Field Meeting 18th October, 1889.

University Lawn Tennis Club.
Secy.: H. A. BUDDEN, B.A.

Donalda Lawn Tennis Club.
Secy.: MISS M. N. EVANS.

DELTA SIGMA SOCIETY.

ESTABLISHED 1884.

President: Maude Squire, B.A.
Vice-President: Jeannie T. Botterell.
Secretary-Treasurer: Louise C. Smith.
Committee: Misses Reid, Derrick, Finley and Pitcher.

THEO DORA SOCIETY.

ESTABLISHED 1887.

Principal object for the present, the diffusion of information respecting Christian Missions, and the cultivation of a Missionary Spirit. Open for membership to students of the Donalda Special Course for women.

President: C. M. Derick.
Vice-President: Jeannie Baillie.
Secretary-Treasurer: Annie Williams.

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President.....Mr. M. W. Murray.
Vice-President.....Mr. H. D. Hamilton.
Secretary.....Mr. Fletcher.
Treasurer.....Mr. Binmore.
Pathologist.....Mr. R. E. McKechnie.
Librarian.....Mr. D. Kee.
Councilmen.....Dr. J. C. Cameron. Dr. F. G. Finlay. Mr. W. E. Inksetter.

McGILL COLLEGE BOOK CLUB.

ESTABLISHED A.D. 1869.

This Club, now in the twentieth year of its existence, has for its primary object,—"to procure an early supply of new books (novels excluded) for its members;" and, next, the increase of the College Library by the presentation thereto of these books, when no longer required by the Club. In this way, an addition has already been made to the Library of not less than 3,402 volumes, in special and general literature.

Membership in the Club is open to all, at an annual subscription of ten dollars. Apart from the advantages to be directly derived from membership, there is the special privilege accorded to members of using the College Library on the same conditions as Graduates, and without making any deposit when books are borrowed. As the number of volumes in the Library now amounts to 27,000, it is clear that this privilege is of value both to special and to general readers.

The members of the Executive Committee are Dr. Johnson, Rev. Dr. Cornish, Rev. Dr. Murray, Mr. S. E. Dawson, Mr. W. M. Ramsay, to any of whom applications for membership may be addressed; or to Mr. E. M. Renouf, at the Club Depository, 2240 St. Catherine street.

Additions to University Regulations.

Regulations of the Board of Governors for Election of Fellows, under Chap. V. of the Statutes of the University.

1. "The Secretary shall receive all Statutory fees, whether annual or for commutation, either personally or by letter, from the graduates desiring to vote, and not from any third party, except as bearer of a written authorization."

2. The voting paper sent in by graduates shall be regarded as confidential, and no communication respecting them shall be made by the Secretary or Scrutineers, except when authorized by vote of the Governors or Corporation.

3. From and after the Election of 1888, no annual fees will be accepted, but each graduate desiring to vote will be required to transmit to the Secretary, on or before the first day of March in the year in which he desires to vote, the full amount of $5.00 as payment of his Registration fee in perpetuity. Provided always that in the event of any graduate having paid for one or more years previous, the amounts so paid shall be deducted from his payment of $5.00, but not to a greater aggregate amount than $2.50.

4. From any after the graduation of 1888, all new graduates shall pay a Registration Fee of $2.50 at the time of their graduation, in addition to the Graduation Fee, and shall be entered in the University list as privileged to vote, and shall have voting papers mailed to them by the Secretary.

Amended Regulations of the Corporation for Licenced Boarding Houses. Applicable to all the Faculties.

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a licence to keep boarding houses shall produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the Students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or desorderly conduct.

4. The keeper of every lodging house shall deposit with the Secretary of the University, on or before September 10th in every year, a certificate as to the sanitary condition of the house from some competent officer or Sanitary Engineer recognised by the Principal.

5. A list of boarding houses licensed under the above regulations shall be kept in the office of the Secretary and shall be accessible to all members of the University and intending students.

Lists of Graduates.

In accordance with a recent resolution of the Corporation of the University, these will be printed separately in a *Triennial Calendar*, to be issued for the first time in the course of the present year.

In the meantime all graduates are earnestly requested to send to the Secretary of the University information as to their places of residence, and as to any corrections or additions that may be desired.

JUNE, 1889.

BENEFACTORS OF

McGill University, Montreal.

I. ORIGINAL ENDOWMENT, 1811.

THE HONORABLE JAMES McGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money unto the "Royal Institution for the advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College, for the purpose of Education and the advancement of learning, in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the Colleges to be comprised in the said University should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above-mentioned property was estimated at the date of the bequest at.....$120,000

II. UNIVERSITY BUILDINGS.

THE WILLIAM MOLSON HALL, being the west wing of the McGill College buildings with the connecting Corridors and Class Rooms, was erected in 1861, through the munificent donation of the founder whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and was formally opened to the public, August, 1882.

III. THE DONALDA ENDOWMENT FOR THE HIGHER EDUCATION OF WOMEN.

This endowment, given by the Honorable Sir Donald A. Smith of Montreal, is for the education of women in the subjects of the Faculty of Arts, up to the standard of the examination for B.A., in classes wholly separate, to constitute a separate Special Course or College for women,—$120 000.

IV. ENDOWED CHAIRS.

THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, endowed by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000.

THE PETER REDPATH CHAIR OF NATURAL PHILOSOPHY, in 1871, endowed by Peter Redpath, Esq.,—$20,000.

THE LOGAN CHAIR OF GEOLOGY, in 1871, endowed by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq.,—$20,000.

THE JOHN FROTHINGHAM CHAIR OF MENTAL AND MORAL PHILOSOPHY, in 1873, endowed by Miss Louisa Frothingham,—$20,000.

THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal,—$30,000.

THE MAJOR HIRAM MILLS CHAIR OF CLASSICS, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,—$42,000.

THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal,—$40,000.

THE GALE CHAIR, in the Faculty of Law, endowed by the late Mrs. Andrew Stuart (*née* Agnes Logan Gale), of Montreal, in memory of her father, the late Honorable Mr. Justice Gale,—$25,000; part received, May, 1889.

V. EXHIBITIONS AND SCHOLARSHIPS.

THE JANE REDPATH EXHIBITION, in the Faculty of Arts, $100 annually—founded in 1868 by Mrs. Redpath, of Terrace Bank, Montreal, and endowed with the sum of $1,667.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number, in the Faculty of Arts—founded in 1871, and endowed in 1882, with the sum of $25,000, by William C. McDonald, Esq.—Annual value, $1,250.

THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871, by Charles Alexander, Esq.—Annual value, $120.

THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100, subscribed by members of the Society, and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science. Annual value $66.

THE BARBARA SCOTT SCHOLARSHIP FOR CLASSICAL LANGUAGE AND LITERATURE—founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2,000,—in 1884. Annual value, $100.

THE GEORGE HAGUE EXHIBITION—founded in 1881 in the Faculty of Arts. Annual value $125.

THE MAJOR HIRAM MILLS MEDAL AND SCHOLARSHIP.—in the Faculty of Arts, founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of $1,500.—Annual value $75.

VI. ENDOWMENTS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq., founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This Medal was endowed by Mr. Chapman in 1874, with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R.H the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson, of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physical Science.

In the same year the "Shakespeare Gold Medal," for an Honour Course, to comprise and include the works of Shakespeare and the Literature of England, from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint—was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Logan, LL.D., F.R.S., F.G.S., &c.

In 1865 the "Elizabeth Torrance Gold Medal" was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.

In the same year the "Holmes Gold Medal" was founded by the Medical Faculty, as a memorial of the late Andrew Holmes, Esq., M D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine, who shall undergo a special examination in all the branches, whether Primary or Final.

In 1874 a Gold and Silver Medal were given by his Excellency the Earl of Dufferin, Governor General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

In 1875 the "Neil Stewart prize of $20 in Hebrew" was endowed by Neil Stewart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture" by Students in the Graduating Class and 2nd and 3rd years, who have attended the University Gymnasium.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science. Continued till 1888.

In 1885 the British Association Gold Medal, for competition in the Graduating class in the Faculty of Applied Science, was founded by subscription of members of the British Association for the Advancement of Science, and by gift of the council of the Association, in commemoration of its meeting in Montreal in the year 1884.

In 1888 a Gold and a Silver Medal were given by His Excellency Lord Stanley, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

VII. SUBSCRIPTIONS TO GENERAL ENDOWMENT.

1856.

John Gordon McKenzie, Esq.	$2000	Charles Alexander, Esq.	$600
Ira Gould, Esq.	2000	Moses E. David, Esq.	600
John Frothingham, Esq.	2000	Wm. Carter, Esq.	600
John Torrance, Esq.	2000	Thomas Patton, Esq.	600
James B. Greenshields, Esq.	1200	Wm. Workman, Esq.	600
William Busby Lambe, Esq.	1200	Honourable Sir A. T. Galt	600
Sir George Simpson, Knight	1000	Honourable Luther H. Holton	600
Henry Thomas, Esq.	1000	Henry Lyman, Esq.	600
John Redpath, Esq.	1000	David Torrance, Esq.	600
James McDougall, Esq.	1000	Edwin Atwater, Esq.	600
James Torrance, Esq.	1000	Theodore Hart, Esq.	600
Honourable James Ferrier	1000	William Forsyth Grant, Esq.	600
Harrison Stephens, Esq.	1000	Robert Campbell, Esq.	600
Henry Chapman, Esq.	600	Alfred Savage, Esq.	600
Honourable Peter McGill.	600	James Ferrier, jun., Esq.	600
John James Day, Esq.	600	William Stephen, Esq.	600
Thomas Brown Anderson, Esq.	600	N. S. Whitney, Esq.	600
Peter Redpath, Esq.	600	William Dow, Esq.	600
Thomas M. Taylor, Esq.	600	William Watson, Esq.	600
Joseph McKay, Esq.	600	Edward Major, Esq.	600
Donald Lorn McDougall, Esq.	600	Honourable Charles Dewey Day	200
Honourable Sir John Rose.	600	John R. Esdaile, Esq.	200

1871.

William Molson, Esq	$5000	T. W. Ritchie, Esq	$600
William C. McDonald, Esq	5000	Messrs. A. & W. Robertson	600
Thomas Workman, Esq	5000	Messrs. Sinclair, Jack & Co	250
John Frothingham, Esq	5000	John Reddy, Esq., M.D	100
J. H. R. Molson, Esq	5000	Wm. Lunn, Esq	100
John McLennan, Esq	2000	Kenneth Campbell, Esq	100
B. Gibb, Esq	600	R. A. Ramsay, Esq	100
W. Notman, Esq	600	William Rose, Esq	50

1881-82.

Hugh McLennan, Esq	$5000	O. S. Wood, Esq	$1000
G. A. Drummond, Esq	4000	J. S. McLachlan, Esq	1000
George Hague, Esq	3000	J. B. Greenshields, Esq. (London)	1000
M. H. Gault, Esq	2000	Warden King, Esq	1000
Andrew Robertson, Esq	1000	W. B. Cumming, Esq	1000
Robertson Campbell, Esq	1000	Mrs. Hew Ramsay	500
J. Hickson, Esq., Mrs. Hickson	1000	R. A. Ramsay, Esq	500
Mrs. Andrew Dow	1000	H. H. Wood, Esq	500
Alexander Murray, Esq	1000	James Burnett, Esq	500
Miss Orkney	1000	Charles Gibb, Esq	500
Hector McKenzie, Esq	1000		

1883—84.

Edward Mackay, Esq $5000

VIII. SUBSCRIPTIONS FOR CURRENT EXPENSES IN

1881-82.

Principal Dawson	$1000	Being	$1000
J. H. R. Molson, Esq	1000	Per annum, 5 years being	5000
George Stephen, Esq	1000	" "	5000
Hon. Donald A. Smith	1000	" "	5000
David Morrice, Esq	200	" "	1000
Messrs. Gault Brothers & Co	200	" "	1000
Messrs. A. S. & S. H. Ewing	200	" "	1000
Hon. Robert Mackay	300	Per annum, 2 years, being	600
Jonathan Hodgson, Esq	100	Per annum, 5 years, being	500
Geo. M. Kinghorn, Esq	100	" "	500
Thomas Craig, Esq	100	Per annum, 2 years, being	200
John Rankin, Esq	200	Being	200
John Duncan, Esq	200	"	200
Robert Benny, Esq	100	"	100
Miss E. A. Ramsay	100	"	100
Hugh Paton, Esq	50	For 2 years, being	100
George Brush, Esq	25	For 5 years, being	125
J. M. Douglas, Esq	50	Being	50
James Court, Esq	50	"	50
David J. Greenshields, Esq	300	"	300

1887-8.

John H. R. Molson, Esq	$1000	Per annum, 3 years, being	$3000
W. C. McDonald, Esq	1000	" " "	3000
Peter Redpath, Esq	1000	" " "	3000
Hon. Sir Donald A. Smith, K.C.M.G	1000	" " "	1500
Hon. Jas. Ferrier	500	" " "	1500
Joseph Hickson, Esq	500	" " "	750
Hugh McLennan, Esq	250	" " "	750
E. B. Greenshields, Esq	250	" " "	750
George Hague, Esq	250	" " "	750
John Molson, Esq	250	" " "	750
Samuel Finley, Esq	250	" " "	750

1888 9.

Mrs. Mackay	$100

IX. ENDOWMENT FOR FACULTY OF APPLIED SCIENCE, 1871.

Daniel Torrance, Esq	$5000
George Moffatt, Esq	1000
Charles J. Brydges, Esq	1000

X. ANNUAL SUBSCRIPTIONS IN AID OF THE FACULTY OF APPLIED SCIENCE, 1871-1879.

Hon. James Ferrier (per annum, for 10 years)	$100
Peter Redpath, Esq. (per annum, for 10 years)	400
John H. R Molson, Esq. (per annum, for 10 years)	400
George H. Frothingham, Esq. (per annum, for 7 years)	400
T. James Claxton, Esq. (per annum, for 6 years)	100
Donald Ross, Esq. (per annum, for 5 years)	50
Miss Mary Frothingham (per annum, for 3 years)	400
H. McLennan, Esq. (per annum, for 5 years)	100
A. F. Gault, Esq. do do	100
Gilbert Scott, Esq., for 2 years	100
Joseph Hickson, Esq., do	100
Principal Dawson, do	300
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100

To provide lectures in Mechanical and Sanitary Engineering.

E. B. Greenshields, Esq	$50
J. E. Bovey, Esq	50
Professor H. T. Bovey	61
Jeffrey H. Burland, B.A.Sc., $100 for 2 years	200
Smaller amounts	40

XI. SUBSCRIPTIONS FOR SPECIAL OBJECTS.

For the support of the Chair of Botany, 1883-84.

Principal Dawson	$500	Per annum, 5 years, being			$2500
Hon. D. A. Smith	250	"	"	"	1250
J. H. R. Molson, Esq	100	"	"	"	500
Mrs. J. H. R. Molson	100	"	"	"	500
G. Hague, Esq	100	"	"	"	500
Mrs. Redpath	100	"	"	"	500
Hugh McKay, Esq	100	"	"	"	500
Robert Moat, Esq	100	"	"	"	500
W. C. McDonald, Esq	100	"	"	"	500
Charles Gibb, Esq	50	"	"	"	250
Miss Orkney	50	"	"	"	250
Robert McKay, Esq	50	"	"	"	250
Mrs. Molson	50	"	"	"	250
Mrs. John Molson	50	"	"	"	250
John Stirling, Esq	50	"	"	"	250
Warden King, Esq	50	"	"	"	250
Miss Hall	50	"	"	"	250
Robert Angus, Esq	50	"	"	"	250
D. A. P. Watt, Esq	50	"	"	"	250
Hugh McLennan, Esq	25	"	"	"	125
Joseph Hickson, Esq	10	"	"	"	50
Mrs. Philips	10				10

For the purchase of Philosophical Apparatus, 1867.

William Molson, Esq	$500	John Frothingham, Esq	$100
John H. R. Molson, Esq	500	David Torrance, Esq	100
Peter Redpath, Esq	500		$2,000
George Moffatt, Esq	250		
Andrew Robertson, Esq	100		

For a Building for the Carpenter Collection of Shells, 1868.

Peter Redpath, Esq	$500	Wm. Dow, Esq	$100
William Molson, Esq	500	Thos. Rimmer, Esq	100
Harrison Stephen, Esq	100	Andrew Robertson, Esq	100
Robert J. Reekie, Esq	100	Mrs. Redpath	100
John H. R. Molson, Esq	100	Benaiah Gibb, Esq	50
Sir William E. Logan, F.R.S.	100	Honorable John Rose	50
John Molson, Esq	100		$2,200
Thos. Workman, Esq., M.P	100		
Geo. H. Frothingham, Esq	100		

For the Erection of the Lodge and Gates.

William Molson, Esq	$100	James A. Mathewson, Esq	$100
John H. R. Molson, Esq	100	Peter Redpath, Esq	100
William Workman, Esq	100	G. H. Frothingham, Esq	100
Joseph Tiffin, jr., Esq	100	G. D. Ferrier, Esq	100
Thos. J. Claxton, Esq	100	Geo. W. Warner, Esq	100
James Linton, Esq	100	John Smith, Esq	100
William McDougall, Esq	100	Charles Alexander, Esq	100
Charles J. Bridges, Esq	100	J. Evans, Esq	100
George A. Drummond, Esq	100	Henry Lyman, Esq	100
Thomas Rimmer, Esq	100		$2,100
William Dow, Esq	100		
John Frothingham, Esq	100		

For the fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A.M., M.D	$1200	Robert Craik, M.D	$200
W. E. Scott, M.D	200	Geo. E. Fenwick, M.D	200
Wm. Wright, M.D	200	Joseph M. Drake, M.D	200
Robert P. Howard, M.D	200	George Ross, M.A., M.D	50
Duncan C. McCallum, M.D	200		

For Library and Museum.

John Thorburn, for purchase of Books	$90	Peter Redpath, Esq., for Museum Expenses, 1882, $1,000; '83, $1,000; '84, $1,000; '85, $1,000; '86, $1,000; 1887, $1,000; '88, $1,000	$7000
Andrew Drummond, do for Applied Science	25	The Graduates in Arts and Applied Science of 1885 for purchase of Books	31
T. J. Claxton, Esq., for purchase of Specimens of Museum	250	Do of 1886	28
Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells	233	The late R. A. Ramsay, Esq. Bequest for purchase of books.	1000
A Lady for Museum Expenses, in 1882	1000	John H. R. Molson for purchase of book on "Butterflies of Eastern, U.S. and Canada"	50
A Lady for Museum Expenses, in 1883-4 and '87	3000		
A friend for the purchase of specimens for the Museum	1900		

For Apparatus.

A Lady for the purchase of Mining Models	$1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same	50
Geo. Stephen, Esq., for the same	50
Charles Gibb, B.A., donation for Apparatus in Applied Science	50
Andrew Drummond, Esq. to Library Fund of Faculty of Applied Science.	25
A Telescope and Astronomical Instrument, the gift of Charles T. Blackman, Esquire, of Montreal, and called after his name.	
The Local Committee for the reception (1881) of American Society of Civil Engineers — For the purchase of appliances for the department of Civil Engineering in Faculty of Applied Science	475
Capt. Adams, Chemical Apparatus	10
J. H. Burland, B.A. Sc., Chemical Apparatus	25
Thos J. Barron, B.A., Philosophical Apparatus	50
J. H. R. Molson, Esq., Dynamo, Gas Engine and Fixtures	1792
The Professors and Lecturers in the Summer Sessions of the Faculty of Medicine — Donation to Apparatus, Museum Library, etc., of the Medica, Faculty, 1887, $1,182; 1888, $1,023.	2205

For Physiological Laboratory of Medical Faculty, 1879.

Dr. Campbell	$100	Dr. Ross	$50
Dr. Howard	100	Dr. Roddick	50
Dr. Craik	100	Dr. Buller	50
Dr. Mc 'allum	100	Dr. Gardner	50
Dr. Drake	100	Dr. Osler	50
Dr. Godfrey	100		
Dr. McEachran, F.R.C.V.S	100		$ 950

Class Rooms for Faculty of Applied Science, 1888.

John R. Molson, Esq	$3000
W. C. McDonald, Esq	3000

Miscellaneous.

Hon. C. Dunkin, M P., in aid of the chair of Practical Chemistry	$1200	T. M. Thompson, Esq, $250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872	$450
Principal Dawson, in aid of the same	1200	Rev. Colin C. Stewart, for the "Stewart Prize in Hebrew."	60
P. Redpath, Esq., do	226		

THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq.—Annual value, $100—terminated in 1878.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value $100. (Terminated in 1883.)

THE BURLAND SCHOLARSHIP—founded 1882, by J. H. Burland, Esq., $100 for a Scholarship in Applied Science, for three years, being $300.

PROFESSOR ALEXANDER JOHNSON—for Scholarship for 3 Sessions, terminated 1886-7 $350

R. A. Ramsay, M A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill $150

XII. LIBRARY, MUSEUM AND APPARATUS FUNDS.

Wm. Molson, Esq., for Library Fund	$4000	A Friend, by the Hon. F. W. Torrance	$400
Wm. Molson, Esq., for Museum Fund	2000	The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884	1500
Hon. F. W. Torrance, Mental and Moral Philosophy Book Fund	1000		
Mrs. Redpath, for the endowment of the Wm. Wood Redpath Library Fund	1000		

XIII. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent endowment, to furnish annually a Scholarship or Prize in a "College for Women" affiliated to the University; or in classes for the Higher Education of Women approved by the University. The amount of the fund is at present $1,100.

XIV. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books—presented by Peter Redpath, Esq., of Montreal, 2368 Volumes.
2. The Robson Collection of works in Archæology and General Literature, presented by Dr. John Robson, of Warrington, England, 3436 Volumes.
3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.
4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2695 Volumes.
5. The Hon. Mr. Justice MacKay, Collection of Books, being the whole of his Library, 2007 Volumes.
6. The "T. D. King Shakespeare Collection," presented by the Hon. Donald A. Smith and W. C. McDonald, Esq., of Montreal, being 214 Volumes.

XV. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium—presented by the late Andrew F. Holmes, M.D.
2. The Carpenter Collections of Shells—presented by the late P. P. Carpenter, Ph. D.
3. The Collection of Casts of Ivory Carvings issued by the Arundel Society—presented by Henry Chapman, Esq.
4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch, of Montreal, and presented by his heirs.
5. The Logan Memorial Collections of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.
6. The Dawson Collection in Geology and Palæontology, being the Private Collections of Principal Dawson, presented by him to the Museum.
7. The Portrait of Peter Redpath, Esq., painted by Mr. Sidney Hodges of London, and presented by Citizens of Montreal.
8. The Bowles Collection of Lepidoptera, presented by W. C. McDonald, Esq., J. H. Burland, Esq.

(See also "List of Donations to the Library and Museum," printed annually in the Calendar and Report to the Museum.)

XVI. ENDOWMENTS OF THE FACULTY OF MEDICINE.

I. Leanchoil Endowment.

Honorable Donald A. Smith.....$50,000

II. Campbell Memorial Endowment.

Established to commemorate the services rendered to the Faculty during 40 years by the late Dean George W. Campbell, M.D., LL.D.

Mrs. G. W. Campbell	$2000
H. A. Allan, Esq	1500
Hon. D. A. Smith	1500
George Stephen, Esq	1000
R. B. Angus, Esq	1000
George Drummond, Esq	1000
Alex. Murray, Esq	1000
Robt. Moat, Esq	1000
W. C. McDonald, Esq	1000
A Friend	1000
Duncan McIntyre, Esq	1000
Alex. Buntin, Esq	1000
A. F. Gault, Esq	1000
M. H. Gault, Esq	1000
G. W. Stephens, Esq	1000
James Benning, Esq	1000
R. P. Howard, M.D	1000
Frank Buller, M.D	1000
G. B. & J. H. Burland, Esqrs	1000
Miss Elizabeth C. Benny	1000
J. C. Wilson, Esq	1000
Mrs. John Redpath	1000
Hon. John Hamilton	1000
Miss Orkney	1000
Hugh McKay, Esq	1000
Hector McKenzie, Esq	1000
Thomas Workman, Esq	1000
Hugh McLennan, Esq	1000
O. S. Wood, Esq	1000
James Burnett, Esq	500
Andrew Robertson, Esq	500
Robt. McKay, Esq	500
John Hope, Esq	500
Alex. Urquhart, Esq	500
E. K. & G. A. Greene, Esqrs	500
R. A. Smith, Esq	500
Geo. Hague, Esq	500
J. K. Ward, Esq	500
Warden King, Esq	500
John Sterling, Esq	500
John Rankin, Esq	500
Cantlie, Ewan & Co	500
Robt. Reford	500
J. & W. Ogilvie	500
Randolf Hersey, Esq	500
John A. Pillow, Esq	500
S. Carsley, Esq	500
D. C. McCallum, M.D	500
McLachlan Bros	500
S. Greenshields, Son & Co	500
Jonathan Hodgson, Esq	500
Duncan McEachran, Esq., F.R.C.V.S	500
Geo. Ross, M.D	500
T. G. Roddick, M.D	500
Wm. Gardner, M.D	500
G. P. Girdwood, M.D	500
G. E. Fenwick, M.D	500
Alex. Ramsay, Esq	500
Cochrane, Cassils & Co	500
Joseph Hickson, Esq	500
Allan Gilmour (Ottawa)	500
R. W. Shepherd, Esq	500
Miles Williams, Esq	300
Chas. F. Smithers, Esq	250
John Kerry, Esq	250
A. Baumgarten, Esq	250
H. W. Thornton, M.D. (New	
R. W. Elmenhorst, Esq	250
W. F. Lewis, Esq	250
Geo. Armstrong, Esq	250
J. M. Douglas, Esq	250
H. Lyman, Sons & Co	250
William Osler, M.D	250
F. J. Shepherd, M.D	250
Benj. Dawson, Esq	200
R. Wolff, Esq	150
James Stuart, M.D	150
A. T. Paterson, Esq	100
M. E. Davis, Esq	100
C. B. Hanvey, M.D. (Yale, B.C.)	100
D. Clunes, M.D. (Nanaimo, B.C.)	100
W. Kinlock, Esq	100
Hua & Richardson	100
Mrs. Cuthbert (New Richmond, Q)	100
J. M. Drake, M.D	100
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III. CAMERON OBSTETRICAL ENDOWMENT.

Dr. J. C. Cameron $10,000

THE GRADUATES' FUNDS.

THE FUND FOR ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution:—

Resolved:—"That the members and graduates be invited to subscribe to a "fund for the endowment of the Libraries of the University; said fund to be in- "vested and the proceeds applied under the supervision of the Council of the "Society in annual additions to the Libraries; an equitable division of said pro- "ceeds to be made by the Council between the University Library and those of "The Professional Faculties."

(In terms thereof the following subscriptions have been announced to date May 1st, 1889, they are payable in one sum, or in instalments as subscribers have elected.)

Alphabetically Arranged.

Baynes, O'Hara, B.C.L.	$ 50	Hall, J. S., jun., B.A., B.C.L.	$ 50
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THE GRADUATES' FUNDS—*Continued.*

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THE DAWSON PRINCIPALSHIP FOUNDATION.

The Graduates' Society of the University, in 1880, and in commemoration of the completion by Dr. Dawson of his twenty-fifth year as Principal, resolved to raise, with the assistance of their friends, a Fund towards the Endowment of the Principalship, under the above name.

Details of the scheme can be had from the Treasurer, C. H. McLeod, Esq., Ma.E. The following subscriptions have been announced to date May 1st, 1889. They are payable in one sum, in instalments, without interest, or with interest till payment of capital, as subscribers have elected.

Alphabetically arranged.

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Lighthall, W. D., B.A., B.C.L.	100	Total to date	$3,010

ADDITIONAL ENDOWMENT, (*June* 1889.)

THE JOHN FROTHINGHAM PRINCIPAL FUND, to be invested for the endowment of the Principalship of the University; Founded by the Rev. Frederick Frothingham and Mrs. J. H. R. Molson,—$40.000.

EXTRACT FROM THE DEED OF GIFT OF THE HON. SIR DONALD A. SMITH, K.C.M.G., LL.D., TO McGILL UNIVERSITY.

(OCTOBER 16th, 1886.)

This donation is hereby made upon the following conditions, which are of the essence thereof, and without which the same would not have been made, namely:—

1st. That the said Donation shall be known and designated as "The Donalda Endowment for the Higher Education of Women," and that the amount thereof shall be invested by the Donee, and the income thereof shall be used in providing a collegiate education for women. Such education shall for the present be conducted in the buildings of the McGill College itself, as a distinct Special Course in the Faculty of Arts; but as soon as practicable the Classes shall be erected into a separate College of McGill University for the higher education of women, with a separate building from that of McGill College. And it is the desire of the Donor that effectual provisions be made by means of the appointment of a Principal, or other local head, for the management of the internal economy and discipline of the said College.

2nd. That in the said Special Course, due provision shall be made by the Governors and Corporation of McGill University, for the conduct and management of classes for women entirely separate from the classes for men, and that no portion of the endowment hereby granted shall at any time be applied either directly or indirectly to sustain mixed classes of the two sexes.

3rd. That the standard of education of women in said course shall be the same as that for men for the ordinary degrees of the said University in Arts, as already arranged by the authorities of the said McGill College, and as announced in the Calendar for 1886 and 1887. But such modifications may hereafter be made in the Course of study from time to time, as the Corporation of McGill University may deem expedient in the interest of the women pupils, but without reducing the standard of education hereby fixed. And the Degrees to be granted to women shall be those of B.A., M.A., and LL.D., which shall be so granted to them on the same conditions as to men, except as to their eligibility as Fellows, and the examinations for such Degrees and for classing, honors, prizes and medals shall be identical with those for men.

4th. That the women undergraduates shall have the right, at their option, to enter the honor classes in the Third and Fourth Years, on the same terms and conditions upon which men may do so.

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.



SESSION OF 1888-89.

Montreal:

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1889.

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FACULTY OF ARTS.

MATRICULATION, SCHOLARSHIPS AND EXHIBITIONS, 1888.

MATRICULATION EXAMINATION.

GREEK.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,..... A. J. EATON, M.A., PH.D.

(A) Translate: Xenophon, Anabasis, Bk. I:

Ἀρίστιππος δὲ ὁ Θετταλὸς ξένος ὢν ἐτύγχανεν αὐτῷ, καὶ πιεζόμενος ὑπὸ τῶν οἴκοι ἀντιστασιωτῶν ἔρχεται πρὸς τὸν Κῦρον καὶ αἰτεῖ αὐτὸν εἰς δισχιλίους ξένους καὶ τριῶν μηνῶν μισθὸν, ὡς οὕτω περιγενόμενος ἂν τῶν ἀντιστασιωτῶν. ὁ δὲ Κῦρος δίδωσιν αὐτῷ εἰς τετρακισχιλίους καὶ ἓξ μηνῶν μισθὸν, καὶ δεῖται αὐτοῦ μὴ πρόσθεν καταλῦσαι πρὸς τοὺς ἀντιστασιώτας πρὶν ἂν αὐτῷ συμβουλεύσηται. οὕτῳ δὲ αὖ τὸ ἐν Θετταλίᾳ ἐλάνθανεν αὐτῷ τρεφόμενον στράτευμα.

ταῦτα δὲ λέγων θορύβου ἤκουσε διὰ τῶν τάξεων ἰόντος, καὶ ἤρετο τίς ὁ θόρυβος εἴη. ὁ δὲ Κλέαρχος εἶπεν ὅτι τὸ σύνθημα παρέρχεται δεύτερον ἤδη καὶ ὃς ἐθαύμασε τίς παραγγέλλει καὶ ἤρετο ὅ τι εἴη τὸ σύνθημα. ὁ δ' ἀπεκρίνατο, ΖΕΥΣ ΣΩΤΗΡ ΚΑΙ ΝΙΚΗ.

1. Where is Thessaly?

2. What is the construction of *ξένος, μισθόν, ἀντιστασιωτῶν*?

3. What is the future of *ἔρχομαι* for Attic Greek?

4. To what tense do the following verbs belong? *ἐτύγχανεν, ἤκουσε, ἤρετο, ἐθαύμασε*. Give also their principal parts.

(B) Translate: Homer, Iliad, Bk. I. 326-342:

Ὣς εἰπὼν προΐει, κρατερὸν δ' ἐπὶ μῦθον ἔτελλεν.
Τῷ δ' ἀέκοντε βάτην παρὰ θῖν' ἀλὸς ἀτρυγέτοιο,
Μυρμιδόνων δ' ἐπί τε κλισίας καὶ νῆας ἱκέσθην.
Τὸν δ' εὗρον παρά τε κλισίῃ καὶ νηῒ μελαίνῃ
Ἥμενον· οὐδ' ἄρα τώ γε ἰδὼν γήθησεν Ἀχιλλεύς.
Τὼ μὲν ταρβήσαντε καὶ αἰδομένω βασιλῆα
Στήτην, οὐδέ τί μιν προσεφώνεον οὐδ' ἐρέοντο·

Αὐτὰρ ὁ ἔγνω ἡσιν ἐνὶ φρεσὶ, φώνησέν τε·
" Χαίρετε, κήρυκες, Διὸς ἄγγελοι ἠδὲ καὶ ἀνδρῶν.
'Ασσον ἴτ'· οὔ τί μοι ὔμμες ἐπαίτιοι, ἀλλ' 'Αγαμέμνων
Ὅ σφῶι προΐει Βρισηΐδος εἵνεκα κούρης.
'Αλλ' ἄγε, διογενὲς Πατρόκλεις, ἔξαγε κούρης.
Καί σφωϊν δὸς ἄγειν. τὼ δ' αὐτὼ μάρτυροι ἔστων
Πρός τε θεῶν μακάρων πρός τε θνητῶν ἀνθρώπων
Καὶ πρὸς τοῦ βασιλῆος ἀπηνέος, εἴ ποτε δ' αὖτε
Χρειὼ ἐμεῖο γένηται ἀεικέα λοιγὸν ἀμῦναι
Τοῖς ἄλλοις.

1. What is the subject of the verb προΐει? the object?

2. Who were the heralds sent to Achilles?

3. For what Attic forms do μίν, ἐμεῖο, ὔμμες, ἦσιν, βασιλῆος stand?

4. Scan lines 335, 337.

GREEK GRAMMAR.

1. Decline (marking the accent): πολίτης, νῆσος, λέων, βασιλεύς, οὗτος.

2. What is the simple stem of λύω? Show the modifications it undergoes in forming the different tense-systems.

3. (*a*) What is meant by the *principal parts* of a verb, and what are these in the Greek verb? (*b*) Give the principal parts of λύω, λείπω, φαίνω, δίδωμι, ἀγγέλλω, ἄγω.

4. Inflect εἰμί and εἶμι in the present indicative and subjunctive; φαίνω in the indic. 2 aor. act. and mid.; ἵστημι in the indic. imperf. pass.

5. (*a*) What verbs may take two object accusatives? (*b*) Translate ἀνὴρ ὁ σοφός; σοφὸς ὁ ἀνήρ; αὐτὸς ὁ στρατηγός; ὁ αὐτὸς ἀνήρ; στρατηγὸν αὐτὸν ἀπέδειξε (designated). εἰ τοῦτο ποιεῖς, ἐπαινῶ (praise); εἰ τοῦτο ἐποίει, ἐπῄνουν ἄν; ἐὰν τοῦτο ποιήσῃς, ἐπαινέσομαι. (*c*) Give the Greek for: *Darius the King; this man; the rest of the state* πόλις *know thyself; he took* (ἐλάβετο) *his hand.*

LATIN.

MONDAY, SEPT. 17TH :—AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, M.A., PH D.

(A) Translate *one* of the following extracts, and answer the questions under it :

I. Tum breviter Dido, voltum demissa, profatur:
"Solvite corde metum, Teucri, secludite curas.
Res dura et regni novitas me talia cogunt
moliri, et late finis custode tueri.
Quis genus Aeneadum, quis Troiae nesciat urbem,
virtutesque virosque, aut tanti incendia belli?
Non obtusa adeo gestamus pectora Poeni;
nec tam aversus equos Tyria Sol iungit ab urbe.
Seu vos Hesperiam magnam Saturniaque arva,
sive Erycis finis regemque optatis Acesten,
auxilio tutos dimittam, opibusque iuvabo.
voltis et his mecum pariter considere regnis;
urbem quam statuo, vestra est: subducite navis;
Tros Tyriusque mihi nullo discrimine agetur.
atque utinam rex ipse, Noto compulsus eodem,
adforet Aeneas!—VIRGIL, AEN. I.

(*a*) Explain the construction of—*voltum*, *corde*, *Aeneadum*, *mihi*. (*b*) Why was Italy called *Hesperia*? (*c*) Account for the epithet *Saturnia*.

II. At domus interior gemitu miseroque tumultu
miscetur; penitusque cavae plangoribus aedes
femineis ululant; ferit aurea sidera clamor.
Tum pavidae tectis matres ingentibus errant,
amplexaeque tenent postes, atque oscula figunt.
Instat vi patria Pyrrhus; nec claustra, neque ipsi
custodes sufferre valent. Labat ariete crebro
ianua, et emoti procumbunt cardine postes.
Fit via vi: rumpunt aditus, primosque trucidant
immissi Danai, et late loca milite complent.
Non sic, aggeribus ruptis quum spumeus amnis
exiit, oppositasque evicit gurgite moles,
fertur in arva furens cumulo, camposque per omnis
cum stabulis armenta trahit.—VIRGIL, AEN. II.

(*a*) Give the principal parts of:—*miscetur*, *ferit*, *figunt*, *rumpunt*, *trahit*. (*b*) Account for the case of *tectis*, *vi*, *aggeribus*, *cumulo*.

III. Nunc, ut a me, patres conscripti, quandam prope iustam patriae querimoniam detester ac deprecer, percipite, quaeso, diligenter quae dicam,

et ea penitus animis vestris mentibusque mandate. Etenim si mecum patria, quae mihi vita mea multo est carior, si cuncta Italia, si omnis res publica, loquatur: M. Tulli, quid agis? Tune eum, quem esse hostem comperisti, quem ducem belli futurum vides, quem exspectari imperatorem in castris hostium sentis, auctorem sceleris, principem coniurationis, evocatorem servorum et civium perditorum, exire patiere, ut abs te non emissus ex urbe, sed immissus in urbem esse videatur? Non hunc in vincula duci, non ad mortem rapi, non summo supplicio mactari imperabis?

Unum etiam nunc concedam: exeant, proficiscantur; ne patiantur desiderio sui Catilinam miserum tabescere. Demonstrabo iter; Aurelia via profectus est: si adcelerare volent, ad vesperam consequentur. O fortunatam rem publicam, si quidem hanc sentinam urbis eiecerit! Uno (mehert cule) Catilina exhausto, levata mihi et recreata res publica videtur.—CICERO, IN CATILINAM.

(a) What case is *M. Tulli*? Explain the form. (*b*) Explain the construction of *quem* and *hostem*; of *Aurelia via* and *fortunatam rem publicam*.

IV. Postero *die* castra ex eo loco movent: idem facit Caesar; equitatumque omnem, ad numerum quatuor millium, quem ex omni Provincia et Aeduis atque eorum sociis *coactum* habebat, praemittit, qui *videant*, quas in partes hostes iter *faciant*. Qui, cupidius novissimum agmen insecuti alieno loco cum equitatu Helvetiorum proelium committunt; et pauci de nostris cadunt. Quo proelio sublati Helvetii, quod quingentis equitibus tantam multitudinem equitum propulerant, audacius subsistere, nonnunquam ex novissimo agmine proelio nostros lacessere, coeperunt.

Multa ab Caesare in eam sententiam dicta sunt, quare negotio desistere non posset, et "neque suam, neque Populi Romani consuetudinem pati, uti optime meritos socios desereret; neque se iudicare Galliam potius esse *Ariovisti*, quam Populi Romani. Bello superatos esse Arvernos et Rutenos ab Q. Fabio Maximo, quibus Populus Romanus ignovisset, neque in provinciam redegisset, neque stipendium imposuisset. Quod si antiquissimum quodque tempus spectari oporteret, Populi Romani iustissimum esse in Gallia imperium: si iudicium senatus observari oporteret, liberam debere esse Galliam, quam bello victam suis legibus uti voluisset."—CAESAR, B.G.I.

State clearly the principles of Syntax that determine the italicized forms.

LATIN GRAMMAR.

(B) 1. Decline *rex, corpus; vir liber; unus quisquam* (marking the quantity).

2. Compare *félix, prudens, rapax, idoneus, facilis, parvus*.

3. Write the Latin for—*ten, ten a piece, eighteen, eighteen hundred and eighty-eight*.

4. Inflect in the present subjunctive and future indicative of both voices: *moneo, pono, audio.*

5. Write down the imperfect and pluperfect subjunctive (1st person only) of—*orior, potior, sentio, veho.*

6. How is the first person of the imperative supplied?

7. How is the absence of the simple future in the Latin Subjunctive supplied?

8. In answer to the questions, *where, when, how long, how far, whither* what case would be used?

9. What verbs govern two accusatives?

10. Translate into Latin: (*a*) You are favored. (*b*) I came to my father. (*c*) Fortune favors the brave. (*d*) He was most dear to the whole nation. (*e*) The top of the mountain: the whole of Greece.

FIRST AND SECOND YEARS.

ENGLISH GRAMMAR.

WEDNESDAY, SEPTEMBER 19TH:—MORNING, 9 TO 10.30.

Examiners,..... .... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

[N.B.—All candidates will be responsible for the first six questions. The remainder are intended for matriculants into the second year only.]

1. Write three feminine, and three diminutive, suffixes, and give two examples of the use of each.

2. Write the rules for the formation of the plural in nouns, and illustrate by example.

3. Into what classes are adjectives divided? What are the inflections of the adjective?

4. Give the past tense and past (or perfect) participle of:—sink, slide, hide, hurt, swim, lie, lay, lead, choose, bite.

5. Define the Preposition, and shew by examples its use in any sentence.

6. Analyse the following sentences:—

a. Trust not yourself, but your defects to know.
Make use of every friend and every foe.

b. What has been said to-day must remain a secret to everyone but ourselves.

c. Is it possible that he is ignorant of the consequences which follow from his action?

7. Explain and illustrate fully:—Reflexive Pronoun, Impersonal (Unipersonal) Verb, Strong Conjugation, Compound Sentence.

8. What distinction is drawn between Logical Analysis and Grammatical Analysis?

ENGLISH HISTORY.

WEDNESDAY, SEPTEMBER 19TH; 10.30 A.M.

Examiner,.....CHARLES E. MOYSE, B.A.

1. State briefly, but definitely, an historical fact connected with each of the following persons: Julius Agricola; Ethelred the Unready; Cerdic; Dunstan; Robert, Duke of Normandy.

2. Give a short account of the reign of Henry VII, or of William III.

3. Say when, between whom, and with what result, each of the follow- battles was fought: Bannockburn, Bothwell Bridge, Agincourt, Falkirk Preston Pans, Plassey, Barnet.

4. Comment on Ordainers, Ironsides, Ich Dien, The Treaty of Troyes, The Six Articles, The Petition of Right, Barebone's Parliament.

5. Mention, with dates, four leading events of different character in the present century, and make ote or two concerning each.

SECOND YEAR.

(You are requested to answer questions 2 and 3 of the first year set, and also the following.)

6. Describe the acquisition and the loss of the English possessions in France, and notice the leading treaties as you proceed.

7. Give a brief outline of Constitutional History under the Stuarts.

ARITHMETIC—ALGEBRA.

TUESDAY, SEPTEMBER 18TH, 1888.

1. Divide \$85.36 into two parts, which shall be to one another as

2. Find the expense of carpeting a room 15 ft. 9 in. long by 12 ft. 5 in. broad, the carpet being $\frac{3}{4}$ yard wide and \$1.25 per yard.

3. Find the interest on \$3456, for 5 months at $4\frac{1}{2}$ per cent. per annum.

4. Divide half the difference of $5\frac{3}{4}$ and $4\frac{5}{6}$ by four times the sum of $\frac{5}{7}$ and $\frac{3}{8}$.

5. If 20 men in three weeks earn \$552, in how many weeks will 14 men earn \$1288.

6. Extract the square root of 5.3824.

7. Find the value of $3a^2 + 7\sqrt{ab} - [3\ (a - b)\ (c - d)]^{\frac{1}{3}}$ when $a = 3$, $b = 12$, $c = 6$, $d = 5$.

8. Multiply $a^{3n} - a^{2n}x^n + a^nx^{2n} - x^{3n}$ by $3a^n + 3x^n$.

Divide $x^3 + p\,x^2 + q\,x + r$ by $x + a$.

9. Find the greatest common measure of
$a^3 + 3a^2\,x - 10\,ax^2 - 24\,x^3$ and $a^2 + 2\,ax - 8\,x^2$.

10. Find the least common multiple of
$4a^2\ (a^2 - x^2)$, $2\,ax\ (a + x)^2$, and $7\,abc\ (a^4 - x^4)$.

11. Solve the equations $\frac{3x - 9}{5} - \frac{2x + 1}{3} = \frac{3x - 5}{15}$;

$179 - 18\ (x - 10) = 158 - 3\ (x - 17)$.

12. Resolve $6\,x^2 + 3xy - 2ax - ay$ into factors.

The examination in Euclid will be vivâ voce.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

MONDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D

1. Translate :—(A) Euripides, Medea, vss. 683-707.

2. (*a*) In ext. (A).—(1) ἄτιμοι * * φίλοι :—explain this use of the *Mas. Plu.* (1) μέγαν ἔρωτα :—What *Acc.*? (3) ἔφυ :—What tense? How

do you explain the use here? (4) *ἐπῆνεσα* :—What use of the *Aor.*? (*b*) *οὔ σε μὴ μεθῶ, οὐ μὴ δυσμενὴς ἔσει* :—Translate and explain the force of *οὐ μὴ* when used (1) with the Fut. Ind.; and (2) with the Aor Subj. (*c*) Give the import of the propositions in :—*ἐπεὶ γενναῖος Αἰγεῦ παρ' ἐμοὶ δεδόκησα. σοφώτερ' ἢ κατ' ἀνδρα. δέχου δὲ μὴ πρὸς ἡδονὴν λόγους. προφέρειν εἰς εὐτυχίαν τῶν γειναμένων.*

3. Translate :—(B) Herodotus, Bk. VIII., chap. 76.

4. (*a*) Describe the geographical situation in ext. (B). (*b*) *μέσαι νύκτες* :—explain this use of the plural. (*c*) *δοῖεν τίσιν* :—express this in Latin. (*d*) *τῶν Περσέων* :—What genitive? (*e*) What dialect did Herodotus use, and in what respects did it differ from that of Xenophon?

5. Translate :—(C) Thucydides, Bk. VI., chaps. 27 and 28.

6. (*a*) *ἡ τετράγωνος ἐργασία* :—Give the import of the article as here used. (*b*) Describe the Hermae, and point out in what the heinousness of the offence done to them consisted. (*c*) *εἴ τις οἶδεν* :—why the Indicative Mood? (*d*) *ἐπὶ ξυνωμοσίᾳ ·ἀπὸ μετοίκων* :—Note the use of these propositions. (*e*) *ὑπολαμβανοντες καὶ νομίσαντες*;—Why this difference of Tense?

7. Translate :—(D) Xenophon, Hellenics, Bk. I., chap. 7, §§ 16-19 inclusive.

8. (*a*) In ext. (D) point out ellipses and supply them after *ὅτι ἔπεισαν*, and before *ὅτι ἐπέταξαν*, and after *οὐκ*. (*b*) In what respects were the trial and execution of the Generals unconstitutional?

9. Translate :—Demosthenes, Olynthiacs, III. § 34 :—*καὶ ταῦτ' οὐχ ἵν' ἀπέχθωναι * * * ἔξεστι γενίσθαι·*

(*a*) Point out the metaphors in :—*τιθασεύσουσι, χειροήθεις, ἐκνενευρισμένοι, προπέποται, συγκεκροτημένοι, φωρᾶται, καταρρεῖ, ἀνεχαίτισε.* (*b* Parse :—*ἐσκεμμένος, πεφηνέναι, φήσαι, ἠξήθη, κομιεῖσθε, ἤρθη, συμπλακῇ ἠνώχλει, ληφθῇ, διεστάναι, παρεῶσθαι, ἐρρωμένος ἦ, συμπλακῇ.*

10. (*a*) *πλεονεκτῆσαι ὑμῖν ἐξόν. καί τι ποιούντων ὑμῶν* :—State the rule for the use of the *Acc.* and *Gen. Absolute*, severally. (*b*) *οὐ μὴν ἀλλ' ἔγωγε* :—Explain the force of this expression and supply the ellipsis. *c θαυμάζω εἰ ἀντήρετε* :—Explain the use of *εἰ* and *ὅτι* to introduce substantival clauses, and show how the former is used in Attic Greek·

LATIN.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner..... ....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Tacitus, Annals, Bk. I., chap. 23.

2. (*a*) What peculiarities in the style of Tacitus are exemplified in the above ext.? (*b*) How far may the political sympathies of Tacitus be inferred from his writings? (*c*) (1) Incendebat haec fletu. (2) Pedibus advolutus. (3) Qui e servitio. (4) Haud multum * * *aberant*. (5) Cedo. (6) Perferendis mandatis idoneus. (7) Morti deposcat :—Comment on the meaning or grammatical usages of these phrases.

3. Translate :—(B) Pliny, Select Letters —

C. PLINIUS TACITO SUO S.

Nihil honestius praestare liberis vestris, nihil gratius patriae potestis. Educentur hic qui hic nascuntur statimque ab infantia natale solum amare frequentare consuescant. Atque utinam tam claros praeceptores inducatis, ut finitimis oppidis studia hinc petantur, utque nunc liberi vestri aliena in loca, ita mox alieni in hunc locum confluant! Haec putavi altius et quas a fonte repetenda, quo magis scires, quam gratum mihi foret, si susciperes quod iniungo. Iniungo autem et pro rei magnitudine rogo ut ex copia studiosorum, quae ad te ex admiratione ingenii tui convenit, circumspicias praeceptores, quos sollicitare possimus, sub ea tamen condicione, ne cui fidem meam obstringam. Omnia enim libera parentibus servo : illi iudicent, illi eligant ; ego mihi curam tantum et inpendium vindico. Proinde siquis fuerit repertus, qui ingenio suo fidat, eat illuc ea lege, ut hinc nihil aliud certum quam fiduciam suam ferat. Vale.

4. Write a short account of the life and character of Pliny, and point out the object for which the letter from which the above ext. is taken was written.

5. Translate :—(C) Virgil, Georgics, Bk. I., vss. 160-175.

6. (*a*) Name the Greek authors, severally, whom Virgil imitated in his Eclogues, Georgics, and the Æneid. In which department of poetry was he most successful? (*b*) Explain tribula, buris, temo, jugum, and stiva.

7. Translate :—(D) Horace, Epistles, I., ep. vi., vss. 36-55.

8. (*a*) Comment on the general purpose of this Epistle, and on the poet's mode of treatment. (*b*) (1) *admirari* :—express this in Greek. (2) *Quiritis*, why in Singular? (3) *Momentis* :—derive and explain, giving the Greek term. (4) *Porticus Agrippae* ; *Cibyra, Bithynia* :—explain. (5) *Qui dictet nomina* :—What was he called. (6) *Trans pondera* :—What explanations are given of this?

9. Give the meaning and derivation of the following words:—Camena, catellam, periscelidem, diludia, personam, catellus, cœnacula, exilis, viatica, salebras, chlamydem, planum.

10. Translate:—(E) Terence, Adelphi, Act IV., Sc. 2, vss. 32-52.

11. (*a*) Parse the following verbs:—siit, operiere, pepereris, reprensum, insuerit, jussim, ausim, recepso, extinxem, direxti, protraxe. (*b*) Derive macellum, deorsum, sursum, angiportum, hercle, pistrilla, ilignis, prandium.

12. Explain, giving examples, (1) the use of the *Prolative Infinitive*, and (2) the *Ablative* and *Genitive* of *Quality*.

GREEK AND LATIN PROSE COMPOSITION.

MONDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek:—

1. Thucydides relates that Themistocles fled to the king of the Persians 2. They say that Crœsus had sent to Sparta concerning an alliance against Cyrus. 3. The ambassadors brought word that the city had been taken. 4. It happened that their allies in Sicily had persuaded the Athenians to come to their assistance with more ships. 5. The Athenians sent forty ships, thinking at the same time that the war there would be brought to a conclusion more quickly than it was. 6. Pericles commanded the Athenians, when the Lacedæmonians invaded Attica not to go out against them, but to remain within their walls.

(B) Translate into Latin:—

But the consuls, being suspected by the plebians, were unable to raise an army. And so they sent ambassadors to the Volsci to ask what their demands were. And to them Coriolanus answered that they must restore their lands and towns to the Volsci, and receive them into their friendship by a treaty equal to that with the Latins. Then they sent the priests, pontiffs, and augurs, to beseech him to grant them fair terms of peace. And they having been received with honour, departed nevertheless without success. Then his mother and the ladies of Rome determined to try what they could do with him. And when they had come to the camp, and had been brought to him, his mother asked whether he was to her C. Marcius or the general of the Volscians Was it to her alone that the ruin of her country was owed? She indeed was too old to live long. But let him consider his wife and children, who must be enslaved with their country. And Coriolanus, moved by these complaints, exclaimed that his mother had saved Rome, but had lost her son. Then he led away the army, on the ground that the city was too strong to be taken.

ANCIENT HISTORY.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the derivation and proper meaning of the term *History*, and name the parts into which History is divided. (*b*) What are the sources of written History as enumerated by Rawlinson? (*c*) What are the cognate sciences with History? Show their importance.

2. (*a*) Write an account of the capture of Babylon by Cyrus. (*b*) Name three of the kings that reigned during the second period of the Babylonian empire. (*c*) Note the progress of the Babylonians in arts, science, and commerce, citing passages from the Old Testament.

3. (*a*) Define the geographical position of Phœnicia, and name the chief cities. (*b*) Give an account of the colonisation and commercial enterprise of the Phœnicians.

4. (*a*) Define the ethnological relationship and the original home of the Persians. (*b*) Sketch the governmental and military systems, and trace the growth of the empire. (*c*) To what causes may the failure to subjugate Greece be assigned?

5. Describe the geographical characteristics of Hellas, and point out their importance and value, and also their disadvantages as regards the foreign and internal relations of the country.

6. (*a*) What causes led to the spread of the Greeks over distant lands? (*b*) distinguish between ἀποικίαι and κληρουχίαι.. Can you point out any modern resemblances to these?

7. Explain the origin and meaning of the phrases:—*Patres Conscripti; Populus Romanus; Quirites; Plebs.*

8. Give an account of the Law of Debt at Rome, and point out how its operation acquired political importance and led to political changes.

9. What was the real character and object of the *Leges Agrariae* at Rome? Define the terms *Ager publicus* and *Possessio.*

10. Trace the most important political events and constitutional changes at Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

FRENCH.

THURSDAY, SEPTEMBER 20TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., LL.D.

1. Faites un résumé complet du premier acte des *Femmes savantes.*

2. Traduisez en anglais :

Mon Dieu ! que (*a*) votre esprit est d'un étage bas !
Que vous jouez au monde un petit personnage,
De vous claquemurer aux choses du ménage,
Et de n'entrevoir point de (*b*) plaisirs plus touchants
Qu'une idole d'époux et des marmots d'enfants !
Laissez aux gens grossiers (*c*), aux personnes vulgaires,
Les bas amusements de ces sortes d'affaires.
A de plus hauts objets élevez vos désirs,
Songez à prendre un goût des plus nobles plaisirs
A l'esprit (*d*), comme nous donnez-vous toute entière.
Vous avez notre mère en exemple à vos yeux
Que du nom de savante on honore en tous lieux :
Tâchez, ainsi que moi, de vous montrer sa fille ;
Aspirez aux clartés qui sont dans la famille
Et vous rendez sensible aux charmantes douceurs
Que l'amour de l'étude épanche dans les cœurs.

MOLIÈRE, *les Femmes savantes A.* 1, sc. 1.

3. *a.* A quelle partie du discours ce *que* appartient-il ? A quelles parties le mot *que* appartient-il encore ? Citez des exemples.

b. Pourquoi pas *des* plaisirs ? Donnez la règle.

c. Pourquoi pas grossières ? Donnez la règle.

d. Donnez les différentes significations du mot *esprit?* Qu'est-ce qu'il y a de sous-entendu avant esprit ?

4. Traduisez en anglais les expression suivantes des *Femmes savantes : Bien lui prend de. N'en pouvais plus. Pour peu que l'on. Sens dessus dessous. Guenille si l'on veut.*

5. Faites connaitre le caractère de Néron, dans *Britannicus.*

6. Qu'est ce que la *Satire Ménippée?* Par qui a-t-elle été écrite ?

7. Traduisez en français :

The labor of rising from the ground, said the artist, will be great, as we see it in the heavier domestic fowls, but as we mount higher, the earth's attraction, and the body's gravity, will be gradually diminished, till we shall arrive at a region where the man will float in the air without any tendency to fall ; no care will then be necessary but to move forward ; which the gentlest impulse will effect.

RASSELAS, Chap. vi.

ENGLISH LITERATURE.

WEDNESDAY, SEPTEMBER 19TH :—MORNING, 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A.
P. T. LAFLEUR, M.A.

1. Give, with occasional quotations, a description of the scene of the Infernal Council, and name the spirits who take a principal part in the debate. Whence did Milton derive his inspiration ?

2. Give full illustration of *latinisms* in Milton's style, and of six peculiarly Miltonic words or expressions.

3. Explain ; Leviathan, Vallombrosa, Ashtaroth, Isis, Tartarean Sulphur, Cocytus, *buxom* air, gryphon, *night-foundered* skiff, deserve the *precious bane*.

4. Make some comment on any one passage of about a dozen lines which strikes you as a high effort of Milton's genius, and quote as much of it as you remember.

5. Scan five verses of your quotation in question (4), and give Milton's opinion as to the employment of rhymed verse for epic poetry.

6. Name some of the more probable sources of *The Tempest*. What date may be held as the approximate time of its appearance ? Give your reasons.

7. Give your own idea of the character of Ferdinand, *or* of Miranda, and support your opinion by appeal to the text.

8. Sketch briefly the career of Caliban.

9. Prove that Shakspere was a close observer of human nature and of natural scenes, by quoting verses from the play.

10. Explain the following :—

Forthrights and meanders, pied ninny, leas, doit, *sanctimonious* ceremonies, pass of pate, yare, to trash for over-topping, my foot my tutor, each putter out of five for one.

ENGLISH LITERATURE.

Spalding, Bk. III, chap. VI. to end ; *Study of Words*.

WEDNESDAY, SEPTEMBER 19TH :—AFTERNOON, 2 TO 5.

Examiner.....CHAS. E. MOYSE, B.A.

1. Name the leading dramatists, before the Commonwealth and a play of each of those concerning whom details are given. Select one from the list, of whom Spalding speaks at some length, and estimate his work.

2. Mention (*a*) Metrical translations, and (*b*) Pastorals which were published in the same period as the plays you named in the previous answer.

3. Notice the works of Dryden and the criticism of them.

4. When and where did the Periodical essayists first appear in our Literature? What were their aims and what was the character of their writings?

5. Contrast Campbell and Southey.

6. Who were Byron's models, and what may be said of Byron as a moralist and an artist?

7. Notice the rise of Review Literature and those who took part in it.

8. Write on some important feature in the history of Literature not touched on in your previous answers.

(The questions on Trench are the same as those set for the Second Year Exhitions)

SCIENCE SCHOLARSHIPS.

MATHEMATICS (*First Paper*).

ANALYTIC GEOMETRY.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.. ... . ALEXANDER JOHNSON, LL.D.

1. Prove that the harmonic mean between the segments of a focal chord of an ellipse is constant and equal to the semi-parameter.

2. The angle subtended at the focus of an ellipse by any chord is bisected by the line joining the focus to the pole of the chord.

3. The triangle which any tangent to an hyperbola forms with the axes has a constant area.

4. Two equal rulers AB, BC are connected by a pivot at B; the extremity A is fixed while the extremity C is made to traverse the right line AC; find the locus described by any fixed P on BC.

5. Define similar conic sections, and prove that two conic sections will be similar, and similarly placed, if the co-efficients of the highest powers of the variables are the same in both, or only differ by a constant multiplier.

6. Find the locus of the intersection of tangents to an hyperbola which cut at right angles.

7. Transform the hyperbola

$$11x^2 + 84\,xy - 24\,y^2 = 156$$ to the axes.

8. Find the equation of the polar of any point with regard to a circle, and show that if a point A lie on the polar of B, then B lies on the polar of A.

9. Find the tangent at the point (5, 4), to $(x-2)^2 + (y-3)^2 = 10$.

10. Given base and sum of sides of a triangle, if at either extremity of the base B a perpendicular be erected to the conterminous side BC, find the locus of P, the point where it meets the external bisector of the vertical angle CP.

11. Given the vertical angle of a triangle, find the locus of the point where the base is cut in a given ratio, if the area also is given.

12. Find the area of the triangle (2, 3), (4, —5), (—3, —6) .

MATHEMATICS (*Second Paper*).

ANALYTICAL GEOMETRY.

TUESDAY, SEPT. 18TH:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D

1. The anharmonic ratio of a pencil, whose sides pass through four fixed points of a conic and whose vertex is any variable point of it, is constant.

2. If a circle have double contact with a conic the tangent drawn to the circle from any point on the conic is in a constant ratio to the perpendicular from the point on the chord of contact.

3. Prove Pascal's theorem for a conic, with inscribed hexagon.

(*a*) Show that this theorem enables us to construct a conic when five points are given.

4. Referring the equation of a conic to two tangents and their chord of contact, show how to inscribe in a conic a triangle whose sides pass through three given points.

5. Find the co-ordinates of the centre of curvature at any point of a parabola.

6. Given three conics similar and similarly placed, their six centres of similitude will lie three by three on right lines.

7. Express the lengths of two conjugate semi-diameters of an ellipse in terms of the eccentric angle ϕ.

8. The three perpendiculars of the triangle formed by three tangents to a parabola intersect on the directrix.

9. Given in magnatude and direction two conjugate semi-diameters of a central conic determine the axes.

10. Show that the general equation of a conic touching the three sides of the triangle of reference in trilinear co-ordinates can be put in the shape

$$\sqrt{l}\alpha + \sqrt{m}\beta + \sqrt{n}\gamma = 0$$

11. Verify that $\alpha\beta - \gamma^2 = 0$ represents a circle if the angles A and B of the triangle of reference are equal.

12. Throw the equation of the line joining two given points $x' y'$, $''x\ y''$ into the form $l\alpha + m\beta + n\gamma = 0$.

MATHEMATICS (*Third Paper*).

CALCULUS.

THURSDAY, SEPTEMBER 20TH: MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Investigate the following expression for the radius of curvature:

$$\frac{1}{\rho^2} = \left(\frac{d^2 x}{ds^2}\right)^2 + \left(\frac{d^2 y}{d s_2}\right)^2$$

2. Find an expression for the radius of curvature in terms of the radius vector from the origin (r) and the perpendicular (p) on the tangent, and apply it to prove that in an ellipse $\rho = \frac{a^2 b^2}{p^3}$

3. Prove that in any curve

$$ds = \sqrt{1 + \frac{r^2 d\theta^2}{dr^2}}\, dr$$

4. Find the length of the part of the normal intercepted by the axis of x in the catenary

$$y = \frac{a}{2}\left(\frac{x}{e^{\frac{x}{a}}} + \frac{-x}{e}\right)$$

5. The area of the greatest ellipse inscribed in a given triangle is $\frac{\pi}{\sqrt{27}}$ (area of the triangle)

6. Find the value of x for which $\sec x - x$ is a maximum or a minimum.

7. Find the value of $(\sin x)^{\tan x}$ when $x = 0$.

8. Find six terms of the development of $\frac{e^{x}}{\cos x}$ in ascending power of x.

9. If $y = A \cos nx + B \sin nx$ prove $\left(\frac{d^2}{dx} + n^2\right) y = 0$

10. Find the area of the surface generated by the revolution of an ellipse round its minor axis.

11. Show that the volume of the surface generated by the revolution of a cycloid round its base is $5\pi^2 a^3$; where a is the radius of the generating circle of the cycloid.

12. Show that in the semi-cubical parabola $ay^2 = x^3$ we have

$$S = \frac{8a}{27}\left\{\left(1 + \frac{9x}{4a}\right)^{\frac{3}{2}} - 1\right\}$$

13. Show that the area of a loop of the curve $r^2 = a^2 \cos n\vartheta$ is $\frac{a^2}{n}$.

14. Find the following integrals:

$$\int \frac{dx}{\cos x\,(5 + 3\cos x)} \quad : \quad \int e^{x}(\cos x + \sin x)\,dx$$

15. Investigate some one method for rationalizing the expression

$$\frac{f x}{\varphi(x)} \qquad \frac{dx}{\sqrt{a + 2bx + cx^2}}$$

16. Find the integrals:

$$\int \frac{\cos^4 \vartheta\, d\vartheta}{\sin^3 \vartheta} \quad : \quad \int e^{ax} \sin^2 x\, dx \quad : \quad \int x^4 \sin x\, dx$$

17. Find the integrals :

$$\int \frac{d\vartheta}{\sin^3\vartheta} : \quad \int \cos^5\vartheta\, d\vartheta : \quad \int \frac{x^3\,dx}{(a+cx^2)^3}$$

$$\int \frac{dx}{1-x^3} : \quad \int \frac{dx}{x^4-1} : \quad \int \frac{x^3\,dx}{\sqrt{1-x^2}}$$

18. Find the value of $\int_0^{\frac{\pi}{2}} \cos^4 x\, dx$.

MATHEMATICS (*Fourth Paper*).

Higher Algebra—Theory of Equation—Plane and Spherical Trigonometry.

FRIDAY, SEPT. 21ST :—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. If any two columns of a determinant be identical the determinant vanishes.

2. Calculate the determinant

$$\begin{vmatrix} 5 & -10 & 11 & 0 \\ -10 & -11 & 12 & 4 \\ 11 & 12 & -11 & 2 \\ 0 & 4 & 2 & -6 \end{vmatrix}$$

3. Prove that $\begin{vmatrix} \sin a & \sin b & \sin\gamma \\ \cos a & \cos b & \cos\gamma \\ \sin a\cos a & \sin b\cos b & \sin\gamma\cos\gamma \end{vmatrix}$

$= 2\sin\frac{1}{2}(a-b)\sin\frac{1}{2}(b-\gamma)\sin\frac{1}{2}(a-\gamma)\{\sin(a+b)+(b+\gamma)+\sin(\gamma+a)\}$.

4. The square of a determinant is a symmetrical determinant.

5. Solve the equations :

$$3x^3 - 6x^2 - 2 = 0;$$
$$6x^5 - 11x^4 - 33x^3 + 33x^2 + 11x - 6 = 0$$

6. The following equations have a root in common; solve them.

$$x^3 - 3x^2 - 16x - 12 = 0\,;\; x^3 - 7x^2 + 5x + 13 = 0$$

7. Find by Newton's method (explaining it) limits to the roots of the equation :

$$x^4 - 5x^2 + 6x - 1 = 0$$

8. The equation $x^4 - 21x^3 + 166x^2 - 546x + 580 = 0$ has roots of the form a, b, $a + b + (a - b)\sqrt{-1}$; solve it.

9. If $A + B + C = \pi$ prove that

$$\cos A + \cos B + \cos C = 1 + 4 \sin \frac{A}{2} \sin \frac{B}{2} \sin \frac{C}{2}$$

10. Sum the series $\sin a + \sin 2a + \sin 3a + 2$ to n terms.

11. Investigate Machin's series for finding the value of π, and calculate the value to 6 places of decimals.

12. In a spherical triangle given

$a = 43° 18'$; $b = 19° 24'$; $C = 74° 22'$ find A and B.

13. In a right angled spherical triangle given $a = 46° 45'$; $A = 59° 12'$, find b.

14. In any spherical triangle from

$$\cos a = \frac{\cos A + \cos B \cos C}{\sin B \sin C}$$

15. The angles of any primitive triangle are supplements of the corresponding sides of the polar.

BOTANY.

TUESDAY, SEPTEMBER 18TH :—9 TO 12 A.M.

Examiner, ... D. P. PENHALLOW, B.Sc.

1. Give a concise statement of the composition, structure and properties of protoplasm in its relation to nutrition and growth.

2. Explain fully what constitutes the structural unit in plants, and show how it is multiplied.

3. Explain the chemical changes incident to the formation of Starch and allied bodies, and show in what organs the function is performed.
Also show how the Starch is disposed of in the plant.

4. Explain the origin, composition and function of protein grains, crystals and inulin, and show where found.

5. Give a concise explanation of the characteristics of the three tissue systems, their relations to one another and order of development.

6. Explain the structure and mode of growth in the endogenous stem.

7. Explain the structure and functions of leaves, and show upon what their duration depends.

8. Explain the formation of pollen; show where it is produced and how its function is completed.

9. Explain the structure of the Angiospermous ovule and the formation of its embryo, and show homologous structures in the Pteridophytes.

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. State and explain the Law of Ampère.

2. Acetic Acid and Methyl Formate. Explain by means of rational formulæ the supposed difference in their constitution.

3. Name the more important Vegetable Acids, and describe the preparation of one of them.

4. How is Chloroform prepared?

5. A piece of metallic Zinc is immersed in a solution of Lead Acetate. What takes place? Give the equation.

6. How is Potassium Permanganate prepared, and what are its properties

7. What takes place when Ammonia-water is added to a solution of Aluminium Sulphate? Give the equation.

8. State what you know with regard to Chromium and its compounds.

9. How may the cleansing action of soap be explained?

10. Explain carefully each of the following equations:—

$$SnO_2 + 2KCy = Sn + 2\,KCyO$$

$$Ca_3P_2O_8 + 2H_2SO_4 = H_4CaP_2O_8 + 2\,CaSO_4$$

SECOND YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....A. J. EATON, M.A., PH.D.

1. Translate: Homer, Odyssey, VI., vss. 119-126 : 239-257.

2. Explain the forms: κάλεον (v. 55), νόει (67), τέων (119), κουρίων (122), δοάσσατο (145), κάμβαλε (172), ἄδοι (245), ἐπιβέιομεν (262).

3. Remark on the following expressions: (*a*) ὅπως ἐθέλησιν (v. 188); (*b*) πειρήσομαι ἠδὲ ἴδωμαι (v. 126).

4. (*a*) Scan verse 248. (*b*) Decline ἐγώ, giving, beside the Attic, the Homeric forms.

5. Give a very brief outline of that part of the story of the Odyssey contained in the five preceding books.

6. Translate: Demosthenes, Olynthiacs, I. §§ 14-15 : II. § 10.

7. (*a*) Write upon the use of the subjunctive mood as illustrated by γνῶτε, χρῆται, ἀμελήσωμεν, ἔλθωμεν. (*b*) ὅτις ἀγνοεῖ ; what other construction might have been used? When can this relative construction be employed to express a result? (*c*) Explain the construction of the infinitives, προΐεσθαι and ποιεῖν. (*d*) ἠνθησαν.... ἂν τύχῃ: carefully account for the mood and tense of these verbs.

8. (*a*) Give a brief description of Olynthus, showing the importance of its acquisition to Philip. (*b*) Write out an analysis of the second Olynthiac.

9. Translate : Herodotus, Bk. III., chaps. 20 and 38.

10. (*a*) In what dialect did Herodotus write? Enumerate the leading peculiarities of this dialect. (*b*) Give the Attic forms for ἑλοίατο, ἑωυτῶν, κατασιτέεσθαι, καλεομένους, ἑρμηνέος, δοκέει. (*c*) οὐ γὰρ ἂν ἱροῖσι κτλ : write out in Greek the suppressed protasis. (*d*) In Boeckh, Frag. Pind., we read : Νόμος ὁ πάντων βασιλεὺς θνατῶν τε καὶ ἀθανατῶν Ἄγει δικαιῶν τὸ βιαιότατον Ὑπερτάτᾳ χερί. What would appear to have been the meaning of Pindar, and in what sense does Herodotus use the phrase νόμος πάντων βασιλεύς?

LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, M A., PH.D.

1. Translate: Livy, Bk. XXII.: (*a*) Chap. 5: *Consul, perculsis omnibus .....fugientium agmen.* (*b*) Chap. 54: *Romam, ne has quidem..... animo latae sunt.*

2. (*a*) State the protasis for which *edissertando* is substituted. (*b*) *obruta esset*—why is the pluperfect subjunctive used? What is the real protasis? State it in a regular form. (*c*) *nuntiabantur nec ulla.....esse*: what change in the construction is noticeable, and how would you account for it? (*d*) Explain the following expressions: *raperent agerentque* (Chap. 1); what is the Greek equivalent? *atri dies: ludi magni: ver sacrum.* (*e*) Explain the form (and account for its use by Livy) of the following words: *duellum, duit, faxit, clepsit, antidea.*

3. (*a*) Give the geographical position of *Lake Trasimene* and *Cannae*. (*b*) What do you know of the early history of Carthage?

4. Translate, Virgil, Georgics, Bk. I. vss. 121-135: 466-475.

5. Derive—*arva, solstitia, monstrum, Eumenides* (v. 278), *immensum, exercitus, nefas, quadrigae, Indigetes* (v. 498).

6. How would you characterize the style of this poem? At whose suggestion was it written, and what was the main object of the poet?

7. Translate, Horace, Odes, Bk. III. Ode XVI. vss. 1-24.

8. (*a*) *munierant*: explain the form, mood and tense. What would be the regular construction? (*b*) Write explanatory notes on:—*converso in pretium deo: diffidit urbium, portas vir Macedo; munera navium saevos illaqueant duces.* (*c*) Upon what verb does *fore* (verse 7) depend?

9. (*a*) Recount the two stories to which the poet alludes in the first three stanzas. (*b*) Write out the scheme of the metre and scan one stanza.

10. Translate (at sight):

Marcellus ut moenia ingressus ex superioribus locis urbem omnium ferme illa tempestate pulcherrimam subiectam oculis vidit, illacrimasse dicitur partim gaudio tantae perpetratae rei partim vetusta gloria urbis. Athenienſium classes demersae et duo ingentes exercitus cum duobus clarissimis ducibus deleti occurrebant et tot bella cum Carthaginiensibus tanto cum discrimine gesta, tot tam opulenti tyranni regesque; praeter ceteros Hieronem, quum recentissimae memoriae rex, tum ante omnia, quae virtus ei fortu-

naque sua dederat, beneficiis in populum Romanum insignis. Ea quum universa occurrerent animo, subiretque cogitatio, iam illa momento horae arsura omnia et ad cineres reditura, priusquam signa Achradinam admoveret, praemittit Syracusanos qui intra praesidia Romana, ut ante dictum est, fuerant, ut alloquio leni impellerent hostes ad dedendam urbem. (Liv. XXV., 24.)

ORDINARY MATHEMATICS.

TUESDAY, SEPT. 18TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. From a given straight line cut off one-third part.

2. If two similar parallelograms, have a common angle, and be similarly situated, they are about the same diagonal.

3. If two chords in a circle intersect one another, the rectangles under their segments are equal. (Prove only the most general case).

4. The area of a triangle is equal to half the rectangle under the base and the perpendicular on the base.

5. Calculate sin 18° to three places of decimals, proving formula.

6. In any triangle $\cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}}$

7. Prove $\sin A + \sin B = 2 \sin \frac{1}{2}(A+B) \cos \frac{1}{2}(A-B)$; if $A = B$, what does this reduce to?

8. Find the number of seconds in a *radian*.

9. Solve the equations:

(*a*) $\dfrac{8x+5}{14} + \dfrac{7x-3}{6x+2} = \dfrac{4x+6}{7}$

(*b*) $\left\{ \begin{array}{l} \frac{1}{4}(2x-y)+1 = \frac{1}{5}(7+x) \\ \frac{1}{5}(3-4x)+3 = \frac{1}{3}(5y-7) \end{array} \right\}$

(*c*) $\sqrt{6x} + \sqrt{6(a+x)} = x^{\frac{1}{2}}$

(*d*) $\dfrac{x}{x+1} + \dfrac{x+1}{x} = \dfrac{13}{6}$.

10. Compare $1\sqrt{2}$ and $\frac{1}{3}\sqrt[4]{27}$, determining which is the greater.

11. Find the number which when increased by 17 is equal to 60 times the reciprocal of the number.

12 Simplify $\dfrac{5}{3x} + \dfrac{3x-1}{1-x^2} + \dfrac{1}{2x+2}$

GEOMETRY.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,..... ..... ALEXANDER JOHNSON, LL.D.

1. The locus of the pole of a variable tangent to a given circle, with respect to the centre as origin, is a concentric circle.

2. Describe a triangle which shall have its vertices on three given straight lines, and its sides tangent to a given circle.

3. Given a system of three co-axal circles; if from any point on one tangents be drawn to the other two, these tangents will be in a constant ratio.

4. The distances of any two points from the centre of a given circle are to one another as the distance of each point from the polar of the other.

5 A chord is drawn through a fixed point either inside or outside a circle, and tangents at its extremities; the locus of their intersection is the polar of the fixed point.

6. The radical axes of each pair of a system of three circles meet a point.

7. The anharmonic ratio of four fixed points on a circle is constant.

8. Given the base and ratio of the sides of a triangle; find the locus of the vertex.

9. If a transversal cut the sides of any triangle, the segments of any side are in a ratio compounded of the ratios of the segments of the other sides.

10. Given the base of a triangle, the difference of the sides, and the locus of the vertex a fixed straight line; construct the triangle.

11. Inscribe a rhombus in a given triangle, having one of its angles coinciding with an angle of the triangle.

12. Divide a given straight line internally into segments such that the rectangle under the segments shall be equal to the square on a given line.

THEORY OF EQUATIONS—ALGEBRA.

FRIDAY, SEPTEMBER 21ST, MORNING 9 TO 12.

Examiner,..... ..... ALEXANDER JOHNSON, LL.D.

1. Investigated any one method for finding a superior limit to the positive roots of an equation.

2. The equation $f(x)=0$ has or has not equal roots according as $f(x$ and $f'(x)$ have or have not a common measure which involves x.

3. State and prove the rule which gives the number of positive and of negative roots of an equation whose roots are all real, from inspection only.

4. Transform the equation $x^3 + q\,x + r = 0$ into another whose roots shall be the squares of the difference of its roots.

5. If n is a prime number and a any root of the equation $x^n - 1 = 0$ except unity, then all the roots of the equation will be given by the series $a, a^2, a^3 \ldots a^n$?

6. Give Cardan's method of solving cubic equations.

7. The roots of the equations $x^3 + p\,x^2 + q\,x + r$ are a, b, c, form the equation whose roots shall be $b + c, c + a, a + b$.

8. Expand e^x in a series of powers of x.

9. If a oxen in m weeks eat b acres of grass, and c oxen eat d acres of grass in n weeks, how many oxen will eat e acres in p weeks, supposing the grass to grow uniformly.

10. Sum the series $2 + 2\,\frac{1}{3} + 2\,\frac{2}{3}$ to n terms.

11. Insert 2 Geometric means between $\frac{1}{9}$ and 9.

12. How many different permutations can be formed from the letters of the word "Algebra" taken all together.

ENGLISH LITERATURE.

Shakspere:—*As you like it.* Trench:—*Study of Words.*

WEDNESDAY, SEPT. 19TH:—2 TO 5 P.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. From what source did Shakspere take the story of As You Like It? What original characters has he introduced? Notice other differences.

2. In what particulars does As You Like It resemble a masque? Although Shakspere leads his characters away from the world, show that their feelings are those of the world generally.

3. (*a*) Give an outline of what is said when the company are assembled to witness the wrestling.

(*b*) What "practices" of Oliver does Adam disclose? (Act II.)

(*c*) Give the substance of Jacques' meditation on a fool.

(*d*) Set forth the tenor of one of the following speeches, which begin *Ros* (to Phebe) And why, I pray you? Who might be your mother, that you insult, exult, and all at once.

Over the wretched?

Jacques de Boys. Let me have audience for a word or two.

4. Trace Touchstone through the play.

5. Comment on the following expressions in regard to language or allusion: conversed with a magician; mines my gentility; like Diana in the fountain; for your father's remembrance; shall acquit him well; the old carlot; conned them out of rings; proper young men; the Duke is humorous; whistles in his sound; we still have slept together; I rest much bounden to you.

6. Scan the following lines, and add explanatory notes, when you can:

(*a*) That he misconstrues all that you have done.

(*b*) Her very silence and her patience.

(*c*) And thou wilt show more bright and seem more virtuous.

(*d*) Which like the toad ugly and venomous.

(*e*) Besides, I like you not. If you will know my house.

(*f*) I see no more in you than in the ordinary.

(*g*) Than in their countenance. Will you have the letter.

(*h*) Thou offer'st fairly to thy brother's wedding.

7. How does Trench refute the argument that man invented language?

8. What words are derived from the following names? Mithridates, Donatus, Hippocrates, Fuchs, Camel, Tonti, Crabats, Gambodia, Phasis. Give meanings when necessary.

9. How does Trench comment on the words cheat, club, ineptus, virtuoso *πονηρία*

10. Distinguish between *contrary* and *opposite*; *loathe* and *detest*.

11. What is the more serious charge brought against Phonetic spelling? Illustrate.

12. Point out the feature seen in *cerulean* and *meridian*.

13. Under the heads *Saxon* and *Norman* arrange the words autumn, winter, earth, palace, boor, villain, pullet, mutton. Make a few general remarks.

14. What is the old English word for *post*, and in what important connection does Trench comment on it?

ENGLISH LITERATURE.

Shakspere:—*As you like it.* Trench:—*Study of Words.*

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(*f*) I see no more in you than in the ordinary

(*g*) Than in their countenance. Will you have the letter

(*h*) Thou offer'st fairly to thy brother's wedding.

7. What argument does Trench support by reference to African, Brazilian and New Holland tribes, and how does he illustrate it?

8. Show that poetry "has been embodied in the names of places."

9. Comment on the following words: retract, paradise, ennui, idiot, sbirri.

10. From what languages are the following words derived: cow, algebra, beef, earl, nadir, monk, home, tariff.

11. Distinguish between education and instruction; abdication and desertion; congratulate and felicitate.

12. Notice important observations concerning the rise of new words, and illustrate them.

13. Give instances of homonyms and their derivation.

FRENCH.

THURSDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, LL.D.

1. Translate into English: *LaFontaine, L. I, Fab. XVI.*

2. Translate into English:

Par ma foi, il y a (*a*) plus de quarante ans que je dis (*b*) de la prose, sans que j'en susse (*c*) rien; et je vous suis le plus obligé du monde de m'avoir appris cela (*d*). Je voudrais (*e*) donc lui (*f*) mettre dans un billet: *Belle marquise, vos beaux yeux me font mourir d'amour:* mais je voudrais que cela fût mis (*g*) d'une manière galante, que cela fût tourné gentiment.

3. (*a*) What kind of a verb is *il y a?* At what tense is it? Give the four tenses of the *subjunctive mood* of that verb.

(*b, c, e, g*) Answer to the same question, for *dis, susse, fût mis,* and *voudrais.*

(*d*) What part of speech is *cela?* State fully the difference between *cela* and *celui-là.*

(*f*) To whom does *lui* refer?

4. Translate into French:

I must have books. Your uncle is an Englishman, and his, is a Frenchman of an illustrious family. The more one reads Racine, the more one admires it. Charles XII was born at Stockholm on the 27th of June, 1682. It is in Asia that the mountains are the highest. The foxes killed many fowls in the poultry yards. They have sung in that church beauti-

ful hymns. The lightning fell on that tree. Well brought up people will not do mean actions. Those who speak without reflection are exposed to many errors. Before studying astronomy one must know mathematics. All the children who were born on the same day as Sesostris were brought to court by order of the king.

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner.....B. J. HARRINGTON, B.A., PH.D.

1. What do you understand by the replacing-power of an element? Give examples.

2. Distinguish carefully between acids, bases and salts.

3. What takes place, (*a*) when Nitric Acid is brought into contact with Sulphurous Anhydride, and (*b*) when dry Lead Nitrate is heated? Give equations.

4. State what you know with regard to the preparation, properties and uses of Hydrogen Sulphide.

5. How is Oxalic Acid prepared? What are its properties? What takes place when it is heated with strong Sulphuric Acid?

6. Explain the constitution of Aniline.

7. State what you know with regard to the chemical changes involved in the decay of organic bodies.

8. How is Picric Acid prepared, and what are its properties?

9. What are Mercaptans? Give examples.

10. State what you know concerning the sources and properties Antimony and Bismuth.

FIRST YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....A. J. EATON, M.A., PH.D.

1. Translate: Homer, Iliad, Bk. IV:—

"Η ῥά νύ μοί τι πίθοιο, Λυκάονος υἱὲ δαΐφρον
Τλαίης κεν Μενελάῳ ἐπι προέμεν ταχὺν ἰὸν,
Πᾶσι δέ κε Τρώεσσι χάριν καὶ κῦδος ἀροιο,
Ἐκ πάντων δὲ μάλιστα Ἀλεξάνδρῳ βασιλῆϊ.

Τῷ κεν δὴ πάμπρωτα παρ' ἀγλαὰ δῶρα φέροιο,
Αἴ κεν ἰδὴ Μενέλαον ἀρήϊον Ἀτρέος υἱὸν
Σῷ βέλεϊ δμηθέντα, πυρῆς ἐπιβάντ' ἀλεγεινῆς.
Ἀλλ' ἄγ' ὀίστευσον Μενελάου κυδαλίμοιο,
Εὐχεο δ' Ἀπόλλωνι Λυκηγενέϊ κλυτοτόξῳ
Ἀρνῶν πρωτογόνων ῥέξειν κλειτὴν ἑκατόμβην
Οἴκαδε νοστήσας ἱερῆς εἰς ἄστυ Ζελείης."—93-103.

Ὣς φάτο, τὸν δ' οὔ τι προσέφη κρατερὸς Διομήδης
Αἰδεσθεὶς βασιλῆος ἐνιπὴν αἰδοῖοιο.
Τὸν δ' υἱὸς Καπανῆος ἀμείψατο κυδαλίμοιο·
"Ἀτρεΐδη, μὴ ψεύδε' ἐπιστάμενος σάφα εἰπεῖν.
Ἡμεῖς τοι πατέρων μὲγ' ἀμείνονες εὐχόμεθ' εἶναι.
Ἡμεῖς καὶ Θήβης ἕδος εἵλομεν ἑπταπύλοιο,
Παυρότερον λαὸν ἀγαγόντ' ὑπὸ τεῖχος ἀρείον,
Πειθόμενοι τεράεσσι θεῶν καὶ Διὸς ἀρωγῇ·
Κεῖνοι δὲ σφετέρῃσιν ἀτασθαλίῃσιν ὄλοντο.
Τῷ μή μοι πατέρας ποθ' ὁμοίῃ ἐνθέο τιμῇ."—401-410.

2. (*a*) Explain the grammatical construction of πίθοιο, τλαίης, τοῦ (v. 97), ἀροιο, ἰδῃ, Μενελάου, ἐνιπήν, πατέρων. (*b*) Where and from what present forms are these verbs made: ἀροις, δμηθέντα, ἔνθεο, εἵλομεν ὄλοντο, ἀγαγόντ', ψεύδε' ?

3. Scan verses 94, 405, 410.

4. State briefly that part of the story of the Iliad contained in the first three books.

5. Translate: Xenophon, Anabasis, Bk. I :—

Ὦ ἄνδρες Ἕλληνες, οὐκ ἀνθρώπων ἀπορῶν βαρβάρων συμμάχους ὑμᾶς ἀγω ἀλλὰ νομίζων ἀμείνους καὶ κρείττους πολλῶν ἑορβάρων ὑμᾶς εἶναι, διὰ τουτο προσελαβον. ὅπως οὖν ἔσεσθε ἄνδρες ἄξιοι τῆς ἐλευθερίας ἣς κέκτησθε καὶ ἧς ὑμᾶς ἐγὼ εὐδαιμονίζω. εὖ γὰρ ἴστε ὅτι τὴν ἐλευθερίαν ἑλοίμην ἂν ἀνθ' ὧν ἔχω παντων καὶ ἄλλων πολλαπλασίων. ὅπως δὲ καὶ εἰδῆτε εἰς οἷον ἔρχεσθε, ἀγῶνα ὑμὰς εἰδὼς διδάξω. τὸ μὲν γὰρ πλῆθος πολὺ, καὶ κραυγῇ πολλῇ ἐπίασιν. ἂν δὲ ταῦτα ἀνάσχησθε, τἄλλα καὶ αἰσχύνεσθαί μοι δοκῶ οἵους ἡμῖν γνώσεσθε τοὺς ἐν τῇ χώρᾳ ὄντας ἀνθρώπους. ὑμῶν δὲ ἀνδρῶν ὄντων καὶ εὐτόλμων γενομένων, ἐγὼ ὑμῶν τὸν μὲν οἴκαδε βούλόμενον ἀπιέναι τοῖς οἴκοι ζηλωτὸν ποιήσω ἀπελθεῖν, πολλοὺς δὲ οἶμαι ποιήσειν τὰ παρ' ἐμοὶ ἑλέσθαι ἀντὶ τῶν οἴκοι.

6. Explain the case of ἀνθρώπων. What is implied in the use of this word? How does it differ in meaning from ἀνήρ? Compare what Herodotus says of the Medes at Thermopylae: ὅτι πολλοὶ μὲν ἄνθρωποι εἶεν, ὀλίγοι δὲ ἄνδρες.

7. (*a*) What is the force of the preposition in *προσ—έλαβον*? (*b*) *ἧς ....ἧς....ὧν*: account for these genitives. Explain the case of *ἡμιν* and *τοῖς οἴκοι*. (*c*) Why is not *οἴκοι* properispomenon? How does *οἰκοι* differ in meaning from *οἴκοι*?

8. *ὅπως οὖν ἐσεσθε*: what verb is to be supplied? Distinguish between the use of *ὅπως* with the future indicative and *ὅπως* with the subjunctive.

9. Translate: Demosthenes, Philippics I. and II:—

καίτοι τί δήποτε, ὦ ἄνδρες Ἀθηναῖοι, νομίζετε τὴν μὲν τῶν Παναθηναίων ἑορτὴν καὶ τὴν τῶν Διονυσίων ἀεὶ τοῦ καθήκοντος χρόνου γίγνεσθαι, ἂν τε δεινοὶ λάχωσιν ἄν τε ἰδιῶται οἱ τούτων ἑκατέρων ἐπιμελούμενοι, εἰς ἃ τοσαῦτ' ἀναλίσκετε χρήματα ὅσα οὐδ' εἰς ἕνα τῶν ἀποστόλων, καὶ τοσοῦτον ὄχλον καὶ παρασκευὴν ὅσην οὐκ οἶδ' εἴ τι τῶν ἁπάντων ἔχει, τοὺς δ' ἀποστόλους πάντας ὑμῖν ὑστερίζειν τῶν καιρῶν, τὸν εἰς Μεθώνην, τὸν εἰς Παγασὰς, τὸν εἰς Ποτίδαιαν; ὅτι ἐκεῖνα μὲν ἅπαντα νόμῳ τέτακται, καὶ πρόοισθεν ἕκαστος ὑμῶν ἐκ πολλοῦ τίς χορηγὸς ἢ γυμνασίαρχος τῆς φυλῆς, πότε καὶ παρὰ τοῦ καὶ τίνα λαβόντα τί δεῖ ποιεῖν, οὐδὲν ἀνεξέταστον οὐδ' ἀόριστον ἐν τούτοις ἠμέληται, ἐν δὲ τοῖς περὶ τοῦ πολέμου καὶ τῇ τούτου παρασκευῇ ἅπαντα ἀδιόρθωτα ἀόριστα ἅπαντα.

τί ζητεῖτ'; ἔφην. ἐλευθερίαν. εἶτ' οὐχ ὁρᾶτε Φίλιππον ἀλλοτριωτάτας ταύτῃ καὶ τὰς προσηγορίας ἔχοντα; βασιλεὺς γὰρ καὶ τύραννος ἅπας ἐχθρὸς ἐλευθερίᾳ καὶ νόμοις ἐναντίος. οὐ φυλάξεσθ' ὅπως, ἔφην, μὴ πολέμου ζητοῦντες ἀπαλλαγῆναι δεσπότην εὑρητε;

10. (*a*) Give the origin and brief description of the two festivals, Panathenaea and the Dionysia. (*b*) Where are the three towns, mentioned in the first extract, situated, and why is reference made to them here? (*c*) What address of his is Demosthenes here quoting? (*d*) State in brief the argument of the second Philippic.

LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

(A) HORACE, ODES, BOOK I.

Examiner,.....A. J. EATON, M.A., PH.D.

1. Translate:

Sic te diva potens Cypri,
Sic fratres Helenae, lucida sidera,
Ventorumque regat pater,
Obstrictis aliis, praeter Iapyga,

Navis, quae tibi creditum
Debes Virgilium finibus Atticis
Reddas incolumem, precor,
Et serves animae dimidium meae.
Illi robur et aes triplex
Circa pectus erat, qui fragilem truci
Commisit pelago ratem
Primus, nec timuit praecipitem Africum
Decertantem Aquilonibus,
Nec tristes Hyadas, nec rabiem Noti
Quo non arbiter Hadriae
Maior, tollere seu ponere vult freta.—Ode III.

2. Translate:

Parcus deorum cultor et infrequens,
Insanientis dum sapientiae
Consultus erro, nunc retrorsum
Vela dare atque iterare cursus

Cogor relictos: namque Diespiter,
Igni corusco nubila dividens
Plerumque, per purum tonantes
Egit equos volucremque currum;

Quo bruta tellus, et vaga flumina,
Quo Styx et invisi horrida Taenari
Sedes Atlanteusque finis
Concutitur.—Ode XXXIV.

3. (*a*) Is it probable that the Virgilius mentioned in Ode III. was the poet? (*b*) What deities are here mentioned, and why are they specially invoked? (*c*) Where was Taenarus, and what ancient tradition was connected with it?

4. (*a*) *finibus Atticis:* do you connect these words with *debes* or *reddas?* why? (*b*) *per purum:* supply the ellipse. (*c*) Explain the Syntax of the following words—*regat, reddas, quo, sapientiae.* (*d*) Give the principal parts of—*obstrictis, tollere, tonantes, promens.*

5. Explain fully the metres of Ode III. and Ode XXXIV.

(B) CICERO, IN CATILINAM, ORAT. I.

6. Translate:

At si hoc idem huic adulescenti optimo P. Sestio, si fortissimo viro M. Marcello dixissem, iam mihi consuli, hoc ipso in templo, senatus iure optimo vim et manus intulisset. De te autem, Catilina, cum quiescunt, probant: cum patiuntur, decernunt: cum tacent, clamant. Neque hi solum,—quorum tibi auctoritas est videlicet cara, vita vilissima,—sed etiam illi equites Romani, honestissimi atque optimi viri, ceterique fortissimi cives, qui circumstant senatum, quorum tu et frequentiam videre et studia

perspicere et voces paulo ante exaudire potuisti. Quorum ego vix abs te am diu manus ac tela contineo, eos—dem facile adducam, ut te haec, quae vastare iam pridem studes, relinquentem usque ad portas prosequantur.

8. *Cum tacent*: State clearly the use of the indicative and subjunctive moods with *cum* (*quum*).

9. (*a*) *in templo*: where was the Senate at this time convened? why here? What was the regular place of meeting? (*b*) Briefly sketch Catiline's life.

(C) VIRGIL, AENEID, BKS. I. AND II.

10. Translate either (A) or (B):

(A) Dixit; et avertens rosea cervice refulsit,
ambrosiaeque comae divinum vertice odorem
spiravere: pedes vestis defluxit ad imos
et vera incessu patuit dea. Ille ubi matrem
agnovit, tali fugientem est voce secutus:
"Quid natum toties crudelis tu quoque falsis
ludis imaginibus? cur dextrae iungere dextram
non datur, ac veras audire et reddere voces?"
Talibus incusat, gressumque ad moenia tendit.
At Venus obscuro gradientes aëre sepsit,
et multo nebulae circum dea fudit amictu,
cernere ne quis eos, neu quis contingere posset,
molirive moram, aut veniendi poscere causas.
Ipsa Paphum sublimis abit, sedesque revisit
laeta suas, ubi templum illi, centumque Sabaeo
ture calent arae, sertisque recentibus halant.—Bk. I.

(B) "Vestibulum ante ipsum primoque in limine Pyrrhus
exsultat, telis et luce coruscus ahena:
qualis ubi in lucem coluber mala gramina pastus,
frigida sub terra tumidum quem bruma tegebat,
nunc positis novus exuviis nitidusque iuventa,
lubrica convolvit sublato pectore terga
arduus ad solem, et linguis micat ore trisulcis.
Una ingens Periphas et equorum agitator Achillis
armiger Automedon, una omnis Scyria pubes
succedunt tecto, et flammas ad culmina iactant.
Ipse inter primos correpta dura bipenni
limina perrumpit, postisque a cardine vellit
aeratos; iamque excisa trabe firma cavavit
robora, et ingentem lato dedit ore fenestram.
Adparet domus intus, et atria longa patescunt;
adparent Priami et veterum penetralia regum
armatosque vident stantes in limine primo.—Bk. II.

GENERAL PAPER.

THURSDAY, SEPT. 20TH :—AFTERNOON, 2 TO 5.

Examiner, ... A. J. EATON, M.A., PH.D.

NOTE.—Candidates for First Year Exhibitions may omit 1, 2, 6, 7 13, 16 (C), and translate any three of 15. Candidates for Second Year Exhibitions may omit 3, 4, 8, 9, 10, 12, 16 (A).

1. Write upon the following topics : Pisistatrus ; Battle of Plataea The Struggle between Sparta and Thebes.

2. (*a*) Sketch the history of Sulla. (*b*) Give an account of the Battle of Lake Trasimenus. (*c*) Describe the election and functions of a consul and censor.

3. (*a*) Give the general rules for the position of the accent. Define the terms *oxytone, paroxytone, perispomenon.* (*b*) Decline (accenting) θάλασσᾶ, δῶρον, φλέψ, βασιλεύς, ἀληθής. (*c*) Distinguish between the *simple stem* and the *tense stem* of a verb. What tense stems are named in the Greek verbs? (*d*) Classify verbs in ω with reference to the formation of the present stem from the simple stem, arranging each of the following examples under its respective class : ἅπτω, φεύγω, φθαιω, γηράσκω, δοκιω, λύω, βλάπτω, φυλάσσω. (*e*) Conjugate λειπω in pf. indic mid., λύω in aor. opt. act., δηλόω pres. subj. act., δίδωμι in 2 aor. ind. act., (accenting each form).

4. Form compounds with the following meanings : 'fish-eater, (ἐχθύς, φαγεῖν), 'stone-throwing,' (λίθος, βολή), 'speech-writer,' (λόγος γράφω), 'man-hating,' (μισέω, ἄνθρωπος).

5. (*a*) What is the Homeric use of the article? (*b*) What cases does πρός govern? Illustrate its variation of meaning with these cases.

6. Classify conditional sentences in Greek and Latin, illustrating by examples.

7. (*a*) Give the etymology of *negotium, intelligo, obedio, ingens, subtilis, sestertia, provincia ;* ἀπόστολος, δάκτυλος, ἀμφιπολοι, ἀγρονόμοι, ὀρεσίτροφος, ἰοχέαιρα. (*b*) What is meant by *anacoluthon, diaeresis, asyndeton, hendiadys.* (*c*) Distinguish in meaning between cŏmes, cōmes ; dĭcat, dīcat ; pălus, pālus ; ĕdo, ēdo.

8. Remark upon the following constructions : Το πλήθος ἐψηφισαντο πολεμεῖν. ἐκ τῶν πόλεων ὧν ἔχει. Ἕλληνές εἰσι τὸ λένος. Τοῦτο ἤδη σοι πέπρακται.

9. Distinguish carefully between the Gerund and the Gerundive construction in Latin.

10. (*a*) When do *in* and *sub* require the accusative? Give examples. (*b*) Distinguish between *odi hominem qui hoc fecit* and *odi hominem qui hoc fecerit.*

11. (*a*) Write the quantity of every vowel in the following: *anima, bene, commisi, post, hodie, misereo.* (*b*) Write the locatives of *Athenae, Argi, Gādes, Corinthus.*

12. Inflect *edo* (I eat) in the pres. indic. and subj. act., giving the alternate forms.

13. (*a*) What is understood by the Ablative and Genitive of Quality, and what is the usual difference between them? (*b*) What construction do the following words take: *dignus, potior, idōneus, egeo, minor* (threaten), *paenitet, proximus, consulo* (consult), *peritus?*

14. Correct all errors in the following: (*a*) Suum a quoque indicium utendum est. (*b*) Milites sub iugo missi sunt. (*c*) sociis ad auxilium. (*d*) Amicus est tanquam alius idem. (*e*) Urbs non parcenda est.

15. Translate into Greek: (1) I admire your virtue and that of your friend. (2) Speak well of those who have done you kind offices. (3) If any one of your slaves should run away from you, and you should take him what would you do with him? (4) If I had known this, I would not have tried at all to dissuade him. (5) He has injured the state more than any other single person. (6) They choose war in preference to peace, because they are ambitious.

16. Translate into Latin:

(A) 1. My friend lived many years in Athens. 2. In Cæsar's consulship the Germans crossed the Rhine. 3. I do not doubt but that the soldiers fought bravely. 4. You are obeyed by no one, yet your father was the ruler of a mighty nation.

(B) Both your brother and you were at that time in exile; my father and I were at home exposed to the fury and cruelty of our deadliest enemies. We had provoked no one, either by words or acts yet we endured much, and long and sorely sighed in vain for freedom and safety; now you and I are secure and free from care, and no one will any longer inflict on us injury and wrong.

(C) Last of all came the Sabines with a great army, under Titus Tatius, their king. There is a hill near to the Tiber, which was divided from the Palatine Hill by a low and swampy valley; and on this hill

Romulus made a fortress, to keep off the enemy from his city. But when the fair Tarpeia, the daughter of the chief who had charge of the fortress, saw the Sabines draw near, and marked their bracelets and their collars of gold, she longed after these ornaments, and promised to betray the hill into their hands if they would give her those bright things which they wore upon their arms. So she opened a gate, and let in the Sabines, and they, as they came in, threw upon her their bright shields and crushed her to death.

EUCLID.

TUESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.

Examiner,.. .....ALEXANDER JOHNSON, LL.D.

1. The area of any parallelogram is equal to that of the rectangle under one of its sides and the perpendicular let fall from any point of that side on the opposite side.

2. If the square constructed on one side of a triangle be equal to the sum of the squares on the other two sides, the angle opposite the first mentioned side is a right angle.

3. Enunciate two propositions of BK. II, which may be used to prove that the square of the sum of two lines, the sum of the squares of the lines, and the squares of their difference, are in Arithmetical Progression, giving, first the ordinary forms of enunciation; and, next, the forms applicable to the proof required.

4. If a quadrilateral be inscribed in a circle and one of its sides be produced, the external angle is equal to the internal and opposite angle.

5. If from a point without a circle, a tangent and a secant be drawn to the circle, the rectangle under the whole secant and the external segment is equal to the square of the tangent. (Prove the most general case only.)

6. To a given circle circumscribe an equilateral triangle.

*7. Construct a rectilineal figure equal to a given one and similar to another.

*8. Similar triangles are in the duplicate ratio of their homologous sides. Define duplicate ratio, using numerical examples in illustration.

* *Extra questions.*

ALGEBRA—ARITHMETIC.

TUESDAY, SEPT. 18TH :—AFTERNOON, 2 TO 5.

Examiner, ...ALEXANDER JOHNSON, LL D;

1. Investigate a formula for determining the sum of a series in Geometrical Progression when the first term, the common ratio, and the number of terms are given.

2. Insert 15 Arithmetic means between 71 and 23.

3. Find the Harmonic mean between two quantities a and b.

4. Solve the equations :

$$x - y = 1\,;\ x^3 - y^3 = 19$$

5. Solve the equations :

(*a*) $\dfrac{.3x - 1}{.5x - .4} = \dfrac{.5 + 1.2x}{2x - .1}$

(*b*) $a + x + \sqrt{a^2 + bx + x^2} = b$

(*c*) $a = y + z,\ b = z + x,\ c = x + y$

(*d*) $3x^2 - 2ax - b = 0$

6. Two rectangles contain the same area, 480 sq. yards. The difference of their lengths is 10 yards, and of their breadths 4 yds.; find their sides.

7. A cubic inch of water weighs 252.5 grains; and 10 inches of snow when melted give one inch of water; find the weight of snow which lies 2 feet deep on a roof 40 feet long by 30 ft. wide.

8. A square whose diagonal is 10 feet long is placed inside another whose diagonal is 30 feet long, find the radius of a circle whose area is equal to the space enclosed between the two squares, the area of a circle being equal to the square of the radius multiplied by 3.14159, that is, to πr^2.

9. Reduce the circulating decimal .565′6′ to a vulgar fraction.

10. Find a fourth proportional to .001, .01, .11.

11. Find the interest on £396 6s. 8d. for 5 months at 5 per cent. per annum.

12. Divide the half of one-half by a half.

ENGLISH LITERATURE.

Shakespere :—*Julius Cæsar.*

WEDNESDAY, SEPT. 19TH :—2 TO 5 P. M.

Examiner, ...CHAS. E. MOYSE, B.A.

1. "As he was ambitious, I slew him."—Who states this? Who dwells on this statement subsequently, and how does he refute it?

2. How does the reader of Cæsar's will make the most of his opportunity? Mention the particulars of the will.

3. Who refer to definite omens in the course of the play ? Indicate their nature.

4. Describe the quarrel between Brutus and Cassius.

5. Point out instances of humour and punning in Julius Cæsar.

6. Refer each of the following extracts to its speaker, say where it occurs, and when a note seems necessary, make it :

(*a*) I held the sword and he did run on it.

(*b*) Cæsar, beware of Brutus

(*c*) his silver hairs
Will purchase us a good opinion.

(*d*) I had rather be a dog and bay the moon.
Than such a Roman.

(*e*) let no images
Be hung with Cæsar's trophies.

(*f*) can I bear that with patience,
And not my husband's secrets ?

(*g*) Thy brother by decree is banished,

(*h*) Set honour in one eye and death in the other.

(*i*) This was the noblest Roman of them all.

(*j*) lowliness is young ambition's ladder.

7. The ides of March ; I had as lief not die ; hearts of controversy ; the great flood ; thews ; fleering tell-tale ; one incorporate To our attempts s you have right well conceited ; men cautelous ; insuppressive mettle ; kerchief ; exorcist ; cognizance ; Madam, what should I do ? Be not fond... to think that ; censure me in your wisdom ; orts; jigging fools ; fearful bravery ; the Hybla bees. Explain allusions, and give, as precisely as you can, the meaning of the extracts that remain. Add to the meanings notes which show knowledge of language.

8. Select from the play words which no longer retain (*a*) the meaning and (*b*) the pronunciation that Shakespere gives them, and say where they occur. Mention and arrange, under such heads as you think fit, leading peculiarities of the syntax of Shakespere's English, with Illustrations from the play. (Reproduction of previous matter will not obtain credit.)

ENGLISH GRAMMAR.

WEDNESDAY, SEPTEMBER 19TH; 9 TO 12 A.M

Examiners,..... .... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

(N.B.—Candidates for the First Year will be responsible for the first eight questions; Candidates for the Second Year will be responsible for questions 1, 3, 4, 7, 8, and from 9 to 11, inclusive.)

1. Define and illustrate fully: Middle Voice, Logical Predicate, Disjunctive Conjunction, Relative Adverb, Tense.

2. Explain the difference between *my* and *mine*, as regards the nature and use of each.

3. What are the various meanings and uses of: but, that, with, as, so, since?

4. Distinguish clearly between *Phrase* and *Clause* in Analysis, and shew by example that either may be converted into the other without change of meaning.

5. Give eight examples of nouns used only in the plural, and account for each so far as you can.

6. Write a complete list of the auxiliaries used in modern English, and give the first person singular of every tense of any *non* defective one.

7. What relations are established by an adverb or adverbial expression?

8. Analyse:—

(*a*) It would demand
Some skill and longer time than may be spared,
To paint these vanities, and how they wrought
In haunts where they, till now, had been unknown.

(*b*) Certainly that man were greedy of life, who should desire to live when all the world were at an end; and he must needs be very impatient who would repine at death in the society of all things that suffer under it.

(*c*) I'll see if I can get my husband's ring
Which I did make him swear to keep forever.

9. Give instances of English words or affixes derived from:
(*a*) Latin before the Saxon Invasion
(*b*) Danish,
(*c*) Celtic,
and shew by example that household words are chiefly of Saxon origin.

10. Summarise the rules for the use of the Subjunctive Mood.

11. Explain fully and illustrate Apposition.

SESSIONAL EXAMINATIONS, 1889.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS, CLASSICS, 1889.

FIRST YEAR.

GREEK.—ODYSSEY, BOOKS XVII.-XX.

WEDNESDAY, APRIL 3RD, 1889:—MORNING, 9 TO 12.

Examiner.....A. J. EATON, PH.D.

I.

1. Translate:

(α) ὦ γύναι, οὐ γὰρ ὄίω ἐυκνήμιδας Ἀχαιοὺς
ἐκ Τροίης ἐὺ πάντας ἀπήμονας ἀπονέεσθαι·
καὶ γὰρ Τρῶάς φασι μαχητὰς ἔμμεναι ἄνδρας,
ἠμὲν ἀκοντιστὰς ἠδὲ ῥυτῆρας ὀϊστῶν
ἵππων τ' ὠκυπόδων ἐπιβήτορας, οἵ κε τάχιστα
ἐκριναν μέγα νεῖκος ὁμοίου πολέμοιο.
τῷ οὐκ οἶδ' εἰ κεν μ' ἀνέσει θεός, ἢ κεν ἀλώω
αὐτοῦ ἐνὶ Τροίῃ· σοὶ δ' ἐνθάδε πάντα μελόντων.
μεμνῆσθαι πατρὸς καὶ μητέρος ἐν μεγάροισιν
ὡς νῦν, ἢ ἔτι μᾶλλον ἐμεῦ ἀπονόσφιν ἐόντος.
αὐτὰρ ἐπὴν δὴ παῖδα γενειήσαντα ἴδηαι,
γήμασθ' ᾧ κ' ἐθέλῃσθα, τεὸν κατὰ δῶμα λιποῦσα.

XVIII. 259-270

(β) ἴσκε ψεύδεα πολλὰ λέγων ἐτύμοισιν ὁμοῖα·
τῆς δ' ἄρ' ἀ υοὶσης ῥέε δάκρυα, τήκετο δὲ χρώς
ὡς δὲ χιὼν κατατήκετ' ἐν ἀκ οπ λοισιν ὄρεσοιν,
ἣν τ' Εὖρος κατέτηξεν, ἐπὴν Ζέφυρος καταχεύῃ·
τηκομένης δ ἀρα τῆς ποταμοὶ πληθουσι ῥέοντες·
ὡς τῆς τήκετο καλὰ παρήια δάκρυ χεούσης,
κλαιούσης ἑὸν ἄνδρα παρήμενον. αὐταρ Ὀδυσσεὺς
θυμῷ μὲν γοόωσαν ἐὴν ἐλέιηρε γυναῖκα,
ὀφθαλμοὶ δ' ὡς εἰ κέρα ἔστασαν ἠὲ σίδηρος
ἀτρέμας ἐν βλεφάροισι· δόλῳ δ' ὄγε δάκρυα κεῦθεν.

XIX. 203-212.

(γ) ὣς ἄρ' ἔφη γρῆυς δὲ κατέσχετο χερσὶ πρόσωπα,
δάκρυα δ' ἔκβαλε θερμά, ἔπος δ' ὀλοφυδνὸν ἔειπεν·
„ὦ μοι ἐγὼ τέο, τέκνον, ἀμήχανος. ἦ σε περὶ Ζεὺς
ἀνθρώρων ἤχθηρε θεουδέα θυμὸν ἔχοντα.

οὐ γάρ πώ τις τόσσα βροτῶν Διὶ τερπικεραύνῳ
πίονα μηρί' ἔκη' οὐδ' ἐξαίτουν ἑκατόμβας,
ὅσσα σὺ τῷ ἐδίδως, ἀρώμενος εἶος ἴκοιο.
γῆράς τε λιπαρὸν θρέψαιό τε φαίδιμον υἱόν·
νῶν δέ τοι οἴῳ πάμπαν ἀφείλετο νόστιμον ἦμαρ.

XIX. 361-370

2. Scan lines 262, 270 and 309, marking and naming the Caesura.

3. (*a*) Give the principal parts of the following verbs, and inflect in the mood and tense in which they occur: ῥέε, ἐκριναν, μελόντων, τελεῖται, ἐδίδως, θρέψαιο. (*b*) Explain the forms ἐθέλησθα, ἔκη', ἀλλύεσκον, ἐσχαρόφιν. (*c*) Derivation of ὄρος, ἀμήχανος, πολύπυρον, δολιχόσκιον, μεγανόχροος, πολυήχεα, μελιηδής, ἄυπνος. Remark upon the form of compound words in Greek.

4. State clearly the principles of Syntax that explain the following forms: (*a*) in regard to case, πατρός (v. 267), ἐμεῖο, ᾧ, θυμῷ (v. 210), χερσί, σέο, οἴῳ; (*b*) in regard to mood and tense, ἐκριναν, ἀνέσει, ἀλώω, μεμνῆσθαί, ἰδηαι, ἐθέλησθα, καταχευῃ, ἴκοιο, θρέψαιο.

5. Give the geographical position of *Zakynthus Malea Pylos.*

II.

6. Translate (at sight):

Τηλέμαχος δ' εἰνῆθεν ἀνίστατο, ἰσόθεος φώς,
εἵματα ἑσσάμενος· περὶ δὲ ξίφος ὀξὺ θὺτ' ὦμῳ,
ποσσὶ δ' ὑπὸ λιπαροῖσιν ἐδήσατο καλὰ πεδίλα,
εἵλετο δ' ἄλκιμον ἔγχος, ἀκαχμένον ὀξέι χαλκῷ
στῆ δ' ἄρ' ἐπ' οὐδὸν ἰών, πρὸς δ' Εὐρύκλειαν ἔειπεν.
„ μαῖα φίλη, τὸν ξεῖνον ἐτιμήσασθ' ἐνὶ οἴκῳ
εὐνῇ καὶ σίτῳ, ἢ αὔτως κεῖται ἀκηδής;
τοιαύτη γὰρ ἐμὴ μῆτηρ πινυτή περ ἐοῦσα·
ἐμπλήγδην ἑτερόν γε τίει μερόπων ἀνθρώπων
χείρονα, τὸν δέ τ' ἀρείον' ἀτιμήσασ' ἀποπέμπει.

7. (*a*). Give an example of *hysteron proteron.* (*b*) Note some of the peculiarities of the Heroic Hexameter.

8. Writi a brief note on the nature of the Homeric Dialect, treating especially of *contraction, augment, special terminations* and *apocope.*

9. (*a*) Give an outline of the story of the Odyssey as contained in the first six books. (*b*) Describe ths dress of the Homeric man.

INTERMEDIATE EXAMINATION.

GREEK.—EURIPIDES, MEDEA.

WEDNESDAY, APRIL 3RD, 1889: MORNING, 9 TO 12.

Examiners: REV. GEORGE WEIR, LL.D.
A. J. EATON, PH.D.

4. Translate:

(A)

δέδοικα δ' αὐτὴν μή τι βουλεύσῃ νέον·
βαρεῖα γὰρ φρὴν, οὐδ' ἀνέξεται κακῶς
πάσχουσ', ἐγᾦδα τήνδε, δειμαίνω τέ νιν·
μὴ θηκτὸν ὧσῃ φάσγανον δι' ἥπατος,
σιγῇ δόμους εἰσβᾶσ' ἵν' ἑστρωται λέχος,
ἢ καὶ τύραννον τόν τε γήμαντα κτάνῃ,
κἄπειτα μείζω ξυμφορὰν λάβῃ τινά.
δεινὴ θάρ· οὔτοι ῥᾳδίως γε συμβαλὼν
ἔχθραν τις αὐτῇ καλλίνικον οἴσεται.
ἀλλ' οἵδε παῖδες ἐκ τρόχων πεπαυμένοι
στείχουσι, μητρὸς οὐδὲν ἐννοούμενοι
κακῶν. νέα γὰρ φροντὶς οὐκ ἀλγεῖν φιλεῖ·

(B)

ἰαχὰν ἄϊον πολύστονον
γόων, λιγυρὰ δ' ἄχεα μογερὰ
βαᾷ τὸν ἐν λέχει προδόταν κακόνυμφον·
θεοκλυτεῖ δ' ἀδικα παθοῦσα
τὰν Ζηνὸς ὁρκίαν Θέμιν, ἃ νιν ἔβασεν
Ἑλλάδ' ἐς ἀντίπορον
δι' ἅλα νύχιον ἐφ' ἁλμυρὰν
πόντου κλῆδ' ἀπέραντον.

(C)

βέβακε δ' ὅρκων χάρις, οὐδ' ἔτ' αἰδὼς
Ἑλλάδι τᾷ μεγάλᾳ μένει, αἰθερία δ' ἀνέπτα.
σοὶ δ' οὔτε πατρὸς δόμοι,
δύστανε, μεθορμίσασθαι
μόχθων πάρα, τῶν δὲ λέκτρων
ἄλλα βασίλεια κρείσσων
δόμοιζ ἐπανέστα.

(D)

ΙΑ. δέσποιν', ἀφεῖνται παῖδες οἵδε σοι φυγῆς,
καὶ δῶρα νύμφη βασιλὶς ἀσμένη χερῖν
ἐδέξατ'· εἰρήνη δὲ τἀκεῖθεν τέκνοις.
ἔα.
τί συγχυθεῖσ' ἑστηκας ἡνίκ' εὐτυχεῖς;
τί σὴν ἔτρεψας ἐμπαλιν παρηίδα
κοὐκ ἀσμένη τόνδ' ἐξ ἐμοῦ δέχει λόγον;

ΜΗ. αἰαῖ·

ΙΑ. τάδ' οὐ ξυνῳδὰ τοῖσιν ἐξηγγελμένοις.

ΜΗ. *αἰαῖ μάλ' αὖθις.* ΠΑ. *μῶν τιν' ἀγγέλλων τύχην*
οὐκ οἶδα, δόξης δ' ἐσφάλην εὐαγγέλου ;
ΜΗ. *ἤγγελας οἴ' ἤγγειλας· οὐ σὲ μέμφομαι.*
ΠΑ. *τί δὴ κατηφεῖς ὄμμα καὶ δακρυρροεῖς ;*
ΜΗ. *πολλή μ' ἀνάγκη, πρέσβυ ταῦτα γὰρ θεοὶ*
κἀγὼ κακῶς φρονοῦσ' ἐμηχανησάμην.

II. (*a*) Explain the forms *ἐγῳδα, κοὐκ, μῶν*; *ἄϊον, ἐστρωται, ἀνεπτα.* (*b*) Account for the case of *καλλ'νικον, μητρος, ἰαχαν, νύχιον, Ἑλλάδι, χεροῖν, τοῖσιν.* (*c*) In ext. (B) write out the words in the Doric dialect, giving their equivalents in the Attic. (*d*) Give the structure of the clause *λιγυρα....κακόνυμφον.* (*e*) Explain the Subjunctives in ext. (A). (*f*) If we should read *βουλευῃ* for *βουλευσῃ* (Ext. A), what change would there be in the meaning ?

III. (*a*) Translate freely, explaining the use of the following tenses, *ἠσθα, λέξεις, δράσω, ἐπήνεσα* :

(1) *τάλαιν', ὡς ἄρ' ἠσθα πέτρος ἢ σίδαρος, ἅτις*
τέκνων ὃν ἔτεκες
ἀροτόν αὐτόχειρι μοίρᾳ κτενεῖς.
(2) *οἶμοι τί λέξεις ; ὡς μ' ἀπώλεσας, γύναι.*
(3) *οἶμοι, τί δράσω ; ποῖ φύγω μητρὸς χέρας ;*
(4) *ἐᾷ δ' Ἰάσων ; οὐδὲ ταῦτ' ἐπήνεσα.*

(*b*) Give different interpretations of (1) *πεσσοί*, (2) *ἐπ' ἀμφιπύλου γὰρ ἐσω μελάθρου γόον ἐ λυον*, (3) *οἰδα γάρ πολλοὺς βροτῶν σεμνοὺς γεγῶτας, τοὺς μὲν ὀμμάτων ἄπο, τοὺς δ' ἐν θυραίοις· οἱ δ' ἀφ' ἡσύχου ποδὸς δίσκλειαν ἐκτήσαντο καὶ ῥᾳθυμίαν.*

IV. (*a*) State where the following places are, and in what connection they are introduced into the Medea :—*Pelion, Symplegades, Troecene, Cephisus, Colchis, Iolchos.* (*b*) Write short descriptive notes on the following names :—*Argo, Pelias, Aeson, Creon, Glauce, Apsyrtus, Aeetes, Pierides, Aegeus, Sisyphus.*

V. (*a*) Write out a scheme of the Iambic Trimeter, scanning the first two lines of I. (D). (*b*) Describe an Anapaestic system. (*c*) Explain the following terms : *isochronous feet ; irrational iambus, cyclic dactyl ; synaeresis.*

VI. Answer *any three* of the following :

1 Explain fully the metres of the lyrical parts of the Medea. In what metres are I. (B), (C) and III. (*a*) (1), written ?

2. Give a sketch of the rise of the Greek drama, and of the three great tragedians.

3. In the days of the perfect Greek drama, where was the place of exhibition? Give a general description of this theatre.

4. Explain the terms: *πάραδος, ἐπεισόδιον, στάσιμα, κορυφαῖος, λογεῖον, ὀρχηστρα.*

5. Remark upon (*a*) the legend of the Medea, as dramatized by Euripides; (*b*) the character of Medea; (*c*) the spirit and tendency of the works of Euripides.

THIRD YEAR.

GREEK.—ÆSCHYLUS.—PROMETHEUS VINCTUS.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) ΠΡ. ἐλαφρὸν ὅστις πημάτων ἔξω πόδα
ἔχει παρινεῖν νουθετεῖν τε τὸν κακῶς
πράσσοντ'· ἐ ὦ δὲ ταῦθ ἅπαντ' ἠπιστάμην.
ἑκὼν ἑκὼν ἡμαρτον, οὐκ ἀρνήσομαι·
ξ ν ητοῖς ' ἀμήγων αὐτὸς εὑρόμην πόνους.
οὐ μήν τι ποιναῖς γ' ᾠόμην τοίαισί με
κατισχνανεῖσθαι πρὸς πέτραις πεδαρσίοις,
τυχόντ' ἐρήμου τοῦδ' ἀγείτονος πάγου.
καί μοι τὰ μὲν παρόντα μὴ δύρεσθ' ἄχη,
πέ δοι δὲ βᾶσαι τὰς προσερποῦσας τύχας
ἀκούσαθ' ὡς μάθητε διὰ τέλους τὸ πᾶν.
πείθεσθέ μοι, πείθεσθε, συμπονήσατε
τῷ νῦν μογοῦντι. ταὐτά τοι πλανωμένη
πρὸς ἄλλοτ' ἄλλον πημονὴ προσ ζάνει.

ΧΟ. οὐκ ἀκούσιος ἐπεθώϋξας
τοῦτο, Προμηθεῦ.
καὶ νῦν ἐλαφρῷ ποδὶ κραιπνόσυτον
θᾶκον προλιποῦσ',
αἰθέρα θ' ἁγνὸν πόρον οἰωνῶν
ὀκριόεσσ χθονὶ τῇδε πελῶ·
τοὺς σοὺς δὲ πόνους
χρῄζω διὰ παντὸς ἀκοῦσαι.

(B) ΙΩ. ὦ κοινὸν ὠφέλημα θνητοῖσιν φανείς,
τλῆμον Προμηθεῦ, τοῦ δίκην πάσχεις τάδε;

ΠΡ. ἁρμοὶ πέπαυμαι τοὺς ἐμοὺς θρηνῶν πόνους.

ΙΩ. οὔκουν πόροις ἂν τήνδε δωρεὰν ἐμοί ;
ΠΡ. λέγ' ἥντιν' αἰτεῖ· πᾶν γὰρ ἂν πύθοιό μου.
ΙΩ. σήμηνον ὅστις ἐν φάραγγί δ' ὤχμασε.
ΠΡ. βούλευμα μὲν τὸ Διὸν, Ἡφαίστου δὲ χείρ.
ΙΩ. ποινὰς δὲ ποίων ἀμπλακημάτων τίνεις ;
ΠΡ. τοσοῦτον ἀρκῶ σοι σαφηνίσαι μόνον.
ΙΩ. παὶ πρός γε τούτοις τέρμα τῆς ἐμῆς πλάνης
δεῖξον τίς ἔσται τῇ ταλαιπώρῳ χρόνος.
ΠΓ. τὸ μὴ μαθεῖν σοι κρεῖσσον ἢ μαθεῖν τάδε.
ΙΩ. μήτοι με κρύψῃς τοῦθ' ὅπερ μέλλω παθεῖν.
ΠΡ. ἀλλ' οὐ μεγαίρω τοῦδέ σοι δωρήματος.
ΙΩ. τί δῆτα μέλλεις μὴ οὐ γεγωνίσκειν τὸ πᾶν ;
ΠΡ. φθόνος μὲν οὐδείς, σὰς δ' ὀκνῶ θρᾶξαι φρένας.
ΙΩ. μή μου προκήδου μᾶσσον ὡς ἐμοὶ γλυκύ.
ΠΡ. ἐπεὶ προθυμεῖ, χρὴ λέγειν· ἄκουε δή.

2. Ext. A.—(1) In vs. 6 explain the force of the particles *μὴν* and *γέ*. (2) vs. 9,—*καὶ μοί*, what use of the Dative ? What variant here ? (3) vs. 13, *ταῦτά τοι—ταὐτά τοι* :—Distinguish between these readings; what case is the Pronoun ; and what is the force of *τοί* ? (4) vs. 10, *πέδοι*,—parse aand explain the case. (5) Show the formation of *πελῶ*, vs. 20. (6) *ἀκούσαις* :—is the antepenultimate long or short, and why ?

3. Ext. (B).—(1) Construe *τοῦ δίκην*. (2) *ἁρμοῖ*,—Give the etymology of this word. (3) *οὔκουν πόροις ἄν*,—Show the force of this expression, and how it differs from *οὐκουν ἐπείξει περιβαλεῖν* in vs. 52. (3) *ἀρκῶ σοι σαφηνίσαι*,—comment on this use of *ἀρκῶ*. (4) *μὴ οὐ γεγωνίσκ*, —explain this use of the double negative. (5) *θρᾶξαι, μᾶσσον*,—explain these forms.

4. Translate carefully the following extt., adding a note where you think it meet on any grammatical usage, or peculiarity of expression or various reading :—

(*a*) ἀσμένῳ δὲ σοι
ἡ ποικιλείμων νὺξ ἀποκρίψει φάος·
πάχνην θ' ἑᾴαν ἥλιος σκεδᾷ πάλιν·

(*b*) εἰ δ' ὧδε τραχεῖς καὶ τεθηγμένους λόγους
ῥίψεις, τάχ' ἄν σου καὶ μακρὰν ἀνωτέρω
θακῶν κλύοι Ζεὺς, ὥστε σοι τὸν νῦν ὄχλον
παρόντα μόχθον παιδιὰν εἶναι δοκεῖν.

(*c*) αὐτὸν γάρ σε δεῖ Προμηθέως,
ὅτῳ τρόπῳ τῆσδ' ἐκκυλισθήσει τέχνης—τύχης.

(*d*) καὶ τοισίδ' οὐδεὶς ἀντέβαινε πλὴν ἐμοῦ.
ἐγὼ δ' ἐτόλμησ'· ἐξελυσάμην βροτοὺς
τοῦ μὴ διαρραισθέντας εἰς Ἅιδου μολεῖν.

5. (*a*) Distinguish between *νῦν* and *νύν*. *οὔκουν* and *οὐκοῦν*. *δῖος* and *διός*. *ἦσαν*, *εἶσαν*, *ἦεσαν*, and *ἧσαν*. *ᾖ*, *ᾗ*, *ἦ* and *ἦ*. *δεῖξαι* and *δείξαι*. (*b*) Define *Crasis* and *Synizesis*, and form Crases of the following:—*καὶ ἄν*, *καὶ εἶτα*, *τοὶ ἄν*, *καὶ οἱ*, *καὶ ἐν*. Give instances of Synizesis.

6. Scan the vss. 1-4, and 20-23, writing down in full the name and scheme of the metres used. What is vs. 23 called?

7. Parse the following verbs, giving the principal parts:—*προκήδο,ᾳ ἀλύξω*, *προσέπτα*, *παρεξίασι*, *ἄγαγες*, *ἐκτακείη*, *ποτνισσομένα*, *ἀπαλλαγῶ ἦσαν*, *λέλακε*, *πημανθῇς*, *ἀφῖξαι*.

8. State as accurately as you can the meaning, and give the derivation of the following words:—*ἄπλῳ*, *ἐτήτυμα*, *ἀχέτας*, *παράκοπον*, *ἄκικυν ἰότατι*, *λεωργόν*, *ἀπαντλῆσαι*, *ἀφεγγής*, *παράορος*, *ἀπλάτου*, *προσείλους*.

9. (*a*) A short account of the life and times of Æschylus. (*b*) What improvements in the composition and and representation of Tragedy were effected by him? (*c*) Name the *Personae* of this Drama and the escne of the action. (*d*) How were Io and Prometheus represented?

B.A. ORDINARY EXAMINATION, 1889.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

GREEK.—{ AESCHINES.—CONTRA CTESIPHONTEM.
AESCHYLUS.—PROMETHEUS VINCTUS.

Examiners, ... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, LL.D.

1. Translate:—

(A) Εἰ τοίνυν, ὦ Ἀθηναῖοι, ἀληθὴς ἦν ὁ παρὰ τούτων λόγος καὶ ἦσαν δύο κείμενοι νόμοι περὶ τῶν κηρυγμάτων, ἐξ ἀνάγκης, οἶμαι, τῶν μὲν θεσμοθετῶν ἐξευρόντων, τῶν δὲ πρυτάνεων ἀποδόντων τοῖς νομοθεταις ἀνῃ ρητ' ἂν ὁ ἕτερος τῶν νόμων, ἤτοι ὁ τὴν ἐξουσίαν δεδωκὼς ἀνειπεῖν ἢ ὁ ἀπαγορεύων· ὁπότε δὲ μηδὲν τοὐτων γεγένηται, φανερῶς δή που ἐξελέγχονται οὐ μόνον ψευδῆ λέγοντες, ἀλλὰ καὶ παντελῶς ἀδύνατα γενέσθαι. ὅθεν δὲ δὴ τὸ ψεῦδος τοῦτο ἐπιφέρουσιν, ἐγὼ διδάξω ὑμᾶς προειπὼν, ὧν ἕνεκα αἱ νόμοι ἐτέθησαν οἱ περὶ ἐν τῷ θεάτρῳ κηρυγμάτων. γιγνομένων γὰρ τῶν ἐν ἀστει τραγῳδῶν ανεκήρυττόν τινες, οὐ πείσαντες τὸν δῆμαν, οἱ μὲν ὅτι στεφανοῦνται ὑπὸ τῶν φυλετῶν, ἕτερον δ' ὑπὸ τῶν δημοτῶν· ἄλλοι δέ τινες ὑποκηρυξάμενοι τοὺς αὐτῶν οἰκέτας ἀφίεσαν ἀπελευθέρους, μάρτυρας τῆς ἀπελευθερίας τοὺς Ἕλληνας ποιούμενοι. ὃ δ' ἦν ἐπιφθονώτατον, προξενίας τινὲς εὑρημένοι ἐν ταῖς ἔξω πόλεσι διεπράττοντο ἀναγορεύεσθαι, ὅτι στεφανοῖ αὐτοὺς ὁ δῆμος, εἰ οὕτω τύχοι, ὁ τῶν Ῥοδίων ἢ καὶ ἄλλης τινὸς πόλεως ἀρετῆς ἕνεκα καὶ ἀνδραγαθίας.

(B) Ὁ δ' εἰσάγων ἦν ὑμᾶς εἰς τὰς Θήβας καιρὸς καὶ φόβας καὶ χρεία συμμαχίας, ἀλλ' οὐ Δημοσθένης, ἐπεὶ περί γε ταύτας τὰς πράξεις τρία τὰ πάντων

μέγιστα Δημοσθένης εἰς ὑμᾶς ἐξημάρτηκε, πρῶτον μὲν, ὅτι Φιλίππου τῷ μὲν ὀνόματι πολεμοῦντος ὑμῖν, τῷ δ' ἔργῳ πολὺ μᾶλλον μισοῦντος Θηβαίους, ὡς αὐτὰ τὰ πράγματα δεδήλωκε, καὶ τί δεῖ τὰ πλείω λέγειν; ταῦτα μὲν τὰ τηλικαῦτα τὸ μέγεθος ἀπεκρύψατο, προσποιησάμενος δὲ μέλλειν τὴν συμμαχίαν γενήσεσθαι οὐ διὰ τοὺς καιροὺς, ἀλλὰ διὰ τὰς αὐτοῦ πρεσβείας πρῶτον μὲν συνέποισε τὸν δῆμον μηκέτι βουλεύεσθαι, ἐπὶ τίσι δεῖ ποιεῖσθαι τὴν συμμαχίαν, ἀλλ' ἀγαπᾶν μόνον, εἰ γίγνεται, τοῦτο δὲ προλαβὼν ἕκδοτον μὲν τὴν Βοιωτίαν πᾶσαν ἐποίησε Θηβαίοις, γράψας ἐν τῷ ψηφίσματι, ἐάν τις ἀφιστῆται πόλις ἀπὸ Θηβαίων βοηθεῖν Ἀθηναίους Βοιωτοῖς τοῖς ἐν Θήβαις, τοῖς ὀνόμασι κλέπτων καὶ μεταφέρων τὰ πράγματα, ὥσπερ εἴωθεν, ὡς τοὺς Βαιωτοὺς ἔργῳ κακῶς πάσχοντας τὴν τῶν ὀνομάτων σύνθεσιν τῶν Δημοσθένους ἀγαπήσοντας, ἀλλ' οὐ μᾶλλον ἐφ οἷς κακῶς πεπόνθεσαν ἀγσνακτήσοντας·

2. (*a*) Explain briefly the historical reference in Ext. (B). (*b*) Parse, at the same time explaning the construction and giving the derivation of the following words, severally in the same extract:—

πολεμοῦντος, δεδήλωκε, πλείω, μέγεθος, ἕκδοτον, ἀφιστῆται, πεπόνθεσαν, τοῖς ὀνόμασι.

3. Explain the following terms and phrases as illustrating the civil polity of Athens:—(1) τὴν βουλὴν, τοὺς πεντακοσίους. (2) τὰς ἐκκλησίας. (3) φυλὴ πρυτανεύουσα. (4) πρυτανεία. (5) πρυτάνεις. (6) φυλὴ προεδρεύουσα. (7) εἰσαγγέλλειν. (8) αἱ τῶν παρανόμων γραφαί. (9) τὰς εὐθύνας ὠφληκώς. (10) ἐπιμελεία τις καὶ διακονία. (11) οἱ θεσμοθέται, (12) ἐπὶ τῷ θεωρικῷ. (13) αἱρεταὶ ἀρχαι. κληρωταὶ ἀρχαι. (14) νομοθέτας. (15) τὴν γραφὴν ἀλῶσεται.

4. At what date was the suit of Æschines against Ctesiphon instituted? How long time elapsed before the trial took place? State definitely the accusation which Æschines brought against Ctesiphon, and also the three distinct grounds on which he based it. How was the court constituted by which the case was tried?

5. Translate:—

(C) ΙΩ. ἐλελεῦ ἐλελεῦ, ὑπό μ' αὖ σφάκελος
καὶ φρενοπλῆγες μανίαι θάλπουσ',
οἴστρου δ' ἀρὲις χρίει μ' ἄπυρος·
κραδία δὲ φοβῳ φρένα λακτίζει.
τροχοδινεῖται δ' ὄμμαθ' ἑλίγδην,
ἔξω δὲ δρόμου φέρομαι λύσσης
πνεύματι μάργῳ, γλώσσης ἀκρατής·
θολεροὶ δὲ λόγοι παίουσ' εἰκῆ
στυγνῆς πρὸς κύμασιν ἄτης.

ΧΟ. ἤ σοφὸς ἤ σοφὸς ὃς
πρῶτος ἐν γνώμᾳ τόδ' ἐβάστασε κοὶ γλώσσᾳ
διεμυθολόγησεν,
ὡς τὸ κηδεῦσαι καθ' ἑαυτὸν ἀριστεύει μακρῷ·
καὶ μήτε τῶν πλούτῳ διαθρυπτομένων
μήτε τῶν γέννᾳ μεγαλυνομένων
ὄντα χερνήταν ἐραστεῦσαι γάμων.
μήποτε μήποτέ μ', ὦ
πότνιαι Μοῖραι, λεχέων Διὸς εὐνάτειραν ἰδοισθε
πέλουσαν·
μηδὲ πλαθείην γαμέτᾳ τινὶ τῶν ἐξ οὐρανοῦ.
ταρβῶ γὰρ ἀστεργάνορα παρθενίαν
εἰσορῶσ' Ἰοῦς μέγα δαπτομέναν
δυσπλάνοις Ἥρας ἀλατείαις πόνων.
ἐμοὶ δ' ὅτι μὲν ὁμαλὸς ὁ γάμος
ἄφοβος, οὐ δέδια, μηδὲ κρεισσόνων θεῶν
ἔρως ἄφυκτον ὄμμα προσδράκοι με.
ἀπόλεμος ὅδε γ' ὁ πόλεμος, ἄπορα
πόριμος· οὐδ' ἔχω τίς ἂν γενοίμαν·
τὰν Διὸς γάρ οὐχ ὁρῶ
μῆτιν ὅπα φύγοιμ' ἄν.

6. Ext. (C) (*a*) *πρὸς κύμασιν ἄτης*:—explain the metaphor. (*b*) With what do you connect *ὑπὸ* in vs. 1st? (*c*) Distinguish between *ἀκρατὴς* and *ἄκρατος* as to etymology and meaning and quantity of the penult. (*d*) Construe the genitives *τῶν διαθρυπτομένων* and *γάμων*. (*e*) *γλώσσᾳ διεμυθολόγησεν*:—Whence the origin of the proverb? *παρθενίαν Ἰοῦς*. *ἄπορα πόριμος*. *ἀρδὶς ἄπυρος*:—Comment on these expressions.

7. Parse the following verbs, giving their principal parts:—*πλαθείην, ἠρᾶτο, προσδράκοι, καθήσθω, ἐπίστασο, ἐρεῖν, φανή, ἠγήσῃ, τελεῖ, ξυγχώσειεν, ἠλιθιώσῃ*.

8. Translate the following extracts, adding an explanatory note where you think proper:—

(*a*)
χθόνα δ' ἐκ πυθεμένων
αὐταῖς ῥίζαις πνεῦμα κραδαίνοι,
κῦμα δὲ πόντου τραχεῖ ῥοθίῳ
ξυγχώσειεν τῶν τ' οὐρανίων
ἄστρων διόδους.

(*b*)
Διὸς δέ τοι
πτηνὸς κύων, δαφονὸς αἰετὸς λάβρως
διαρταμήσει σώματος μέγα ῥάκος,
ἄκλητος ἕρπων δαιτελεὺς πανήμερος,
μελαινόβρωτον δ' ἧπαρ ἐκθοινήσεται.

(c) καὶ μὴν σύ γ' οὔπω σωφρονεῖν ἐπίστασαι.
σὲ γὰρ προσηύδων οὐκ ἂν ὄνθ' ὑπηρέτην.
καὶ μὴν ὀφείλων γ' ἂν τίνοιμ' αὐτῷ χάριν.

9. (a) Write down the scale of the *Anapaestic Dimeter Acatalectic*. (b) With what vowels can elision take place? Supply the elided vowels in *βούλευ', ἤδοι', τιν', αὐλῶν'*. (c) Resolve the following crases: *χἠ, χὠσα, κεἰς, μἤχοιμι, οὐκ οὐμο'*.

10. Write a sketch of the life of Æschylus, enumerating his plays, the improvements which he made in the Drama, and the parts in the Prometheus Vinctus requiring mechanical contrivance for their representation on the stage.

FIRST YEAR.

LATIN.—CICERO.—SELECTED LETTERS.

THURSDAY, APRIL 4th, 1889:—MORNING, 9 TO 12.

Examiner,.....A. J. EATON, PH.D.

I.

1. Translate:—

M. TULLIUS M. F. CICERO S. D. CN. POMPEIO CN. F. MAGNO IMPERATORI.

S.T.E.Q.V.B.E. Ex litteris tuis, quas publice misisti, cepi una cum omnibus incredibilem voluptatem; tantam enim spem otii ostendisti, quantam ego semper omnibus te *uno* fretus pollicebar; sed hoc scito, tuos veteres hostes, novos amiços, vehementer litteris perculsos atque ex magna spe deturbatos iacere. Ad me autem litteras quas misisti, quamquam exiguam significationem tuae erga me voluntatis habebant, tamen mihi scito iucundas fuisse; nulla enim *re* tam laetari soleo quam meorum officiorum conscientia, quibus si quando non mutue respondetur, apud me plus officii residere facillime patior: illud non dubito, quin, si te mea summa erga te studia parum mihi *adiunxerint*, res publica nos inter nos conciliatura coniuncturaque *sit*.

2. Translate:—

CICERO ATTICO SAL.

Lippitudinis meae signum tibi *sit* librarii manus et eadem causa brevitatis, etsi nunc quidem quod *scriberem* nihil *erat:* omnis exspectatio nostra erat in nuntiis Brundisinis. Si nactus hic esset Gnaeum nostrum, spes dubia pacis, sin ille ante tramisisset, exitiosi belli metus. Sed videsne, in quem hominem *inciderit* res publica? quam acutum, quam vigilantem, quam paratum? Si mehercule neminem *occiderit* nec cuiquam quicquam demerit, ab iis, qui eum maxime timuerant, maxime *diligetur*. Et vide-

quam conversa res sit: illum, *quo* antea confidebant, metuunt, hunc amant, quem timebant. Id quantis nostris peccatis vitiisque evenerit non possum sine molestia cogitare. Quae autem impendere *putarem* scripseram ad te, et iam tuas litteras exspectabam.

3. (*a*) Explain carefully the construction of words printed in Italics in the above extracts. (*b*) Write out in full the Latin salutation and introduction of the first of the above letters.

4. (*a*) Give the date of these letters, and write a note explanatory of the political situation of the times. (*b*) Show, by map or otherwise, the geographical position of *Puteoli*, *Baiae*, *Tarentum*, *Brundisium*, *Caieta* *Dyrrachium*.

5. Translate into Latin:—

(1) When I go to Puteoli, I shall remain there one day. (2) I take pains to inform my kind friend, Atticus, daily of the doings in the senate, but never allow myself to distress him with my own complaints. (3) Clodius caused a temple to be built on the former site of Cicero's house, to prevent the restitution of Cicero's property, should he ever be recalled by the senate. (4) There can be no question that in point of consulting his country's interests rather than his own, of sacrificing his own convenience to that of his friends, of keeping in check alike his temper and his tongue, this young man far outdid all the old.

II.

6. Translate freely:—

(*a*) Quantum dolorem acceperim et quanto fructu sim privatus et forensi et domestico Lucii fratris nostri morte, in primis pro nostra consuetudine tu existimare potes: nam mihi omnia, quae iucunda ex humanitate alterius et moribus homini accidere possunt, ex illo accidebant: qua re non dubito quin tibi quoque id molestum sit, cum et meo dolore moveare et ipse omni virtute officioque ornatissimum tuique et sua sponte et meo sermone amantem, adfinem amicumque amiseris.

7. Translate (at sight), expressing the dates according to our notation:—

Tullius et Cicero Tironi Suo Sal. Plur. Dic.

Nos a te, ut scis, discessimus a. d. IIII. Non. Nov.; Actium venimus a. d. VII. Id. Nov.; ibi propter tempestatem a. d. VI. Id. morati sumus. Inde Corcyram bellissime navigavimus. Corcyrae fuimus usque ad. a. d. XVI. K. Dec. tempestatibus retenti. Interea, qui cupide profecti sunt, multi naufragia fecerunt. Nos eo die cenati solvimus; inde austro lenissimo, caelo sereno, die postero, Brundisium venimus, eodemque tempore simul nobis cum in oppidum introiit Terentia, quae te facit plurimi. Servus Cn. Plancii Brundisii tandem aliquando mihi a te exspectatissimas litteras

reddidit, quae me molestia valde levarunt, utinam omnino liberassent! sed tamen Asclapo medicus plane confirmat prope diem te valentem fore.

8. (*a*) Explain the construction of *fructu*, *iucunda*, *moveare*, *tui*. (*b*) Write a brief note upon the following terms: *nomenclator*, *privilegium*, *Latinae Feriae*. (*c*) What is meant by the Epistolary Imperfect? (*d*) What was the cause of Cicero's exile? Give a brief account of his exile and return.

9. (*a*) Write out the first sentence of I. 2, marking all *naturally* long vowels. (*b*) Select from the above extracts an example of *hendiadys*.

FIRST YEAR.

CREEK AND ROMAN HISTORY

THURSDAY, APRIL 4TH, 1889:—AFTERNOON, 2 TO 5.

Examiner,.....A. J. EATON, M.A., Ph.D.

1. Describe the river system of continental Greece.

2. Remark on the character of ancient civilisation.

3. (*a*) Give an account of the legislation of Solon; (*b*) the tyranny of the Peisistratidai.

4. Relate the story of the battle of Marathon.

5. Describe the constitution of the Roman Commonwealth, on the expulsion of the kings.

6. Give the date and account of the Gaulish invasion of Italy.

7. What were the Licinian laws, and when were they passed

8. (*a*) What events led to the Second Punic War? (*b*) Describe Hannibal's march into Italy and the chief events of the campaigns of 218 and 217 B.C.

INTERMEDIATE EXAMINATION, 1889.

LATIN.—HORACE, EPISTLES, BOOK II.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiners..... { REV. GEORGE WEIR, L.L.D. / A. J. EATON, PH.D.

1. Translate:

(A) Ac ne forte putes me, quae facere ipse recusem,
cum recte tractent alii, laudare maligne:
ille per extentum funem mihi posse videtur
ire poeta, meum qui pectus inaniter angit,
irritat, mulcet, falsis terroribus implet
ut magus, et modo me Thebis, modo ponit Athenis.

Verum age et his, qui se lectori credere malunt
quam spectatoris fastidia ferre superbi,
curam redde brevem, si munus Apolline dignum
vis complere libris et vatibus addere calcar,
ut studio maiore petant Helicona virentem. Ep. I. 208—218.

(B) Gemmas, marmor, ebur, Tyrrhena sigilla, tabellas,
argentum, vestis Gaetulo murice tinctas,
sunt qui non habeant, est qui non curat habere.
Cur alter fratrum cessare et ludere et ungui
praeferat Herodis palmetis pinguibus, alter
dives et importunus ad umbram lucis ab ortu
silvestrem flammis et ferro mitiget agrum,
scit Genius, natale comes qui temperat astrum,
naturae deus humanae, mortalis in unum
quodque caput, voltu mutabilis, albus et ater.
Ep. II. 180—189.

(C) Syllaba longa brevi subiecta vocatur iambus,
pes citus : unde etiam trimetris accrescere iussit
nomen iambeis, cum senos redderet ictus
primus ad extremum similis sibi. Non ita pridem,
tardior ut paulo graviorque veniret ad aures,
spondeos stabilis in iura paterna recepit
commodus et patiens, non ut de sede secunda
cederet aut quarta socialiter. Hic et in Acci
nobilibus trimetris apparet rarus, et Enni
in scaenam missos cum magno pondere versus
aut operae celeris nimium curaque carentis
aut ignoratae premit artis crimine turpi. A. P. 251—262.

(D) Grais ingenium, Grais dedit ore rotundo
musa loqui, praeter laudem nullius avaris.
Romani pueri longis rationibus assem
discunt in partes centum diducere. 'Dicat
filius Albini: si de quincunce remota est
uncia, quid superat? Poteras dixisse.' 'Triens.' 'Eu!
rem poteris servare tuam. Redit uncia, quid fit?'
'Semis.' An haec animos aerugo et cura peculi
cum semel imbuerit, speramus carmina fingi
posse linenda cedro et levi servanda cupresso?
A. P. 323—332.

2. (*a*) Explain fully the use of the subjunctives in the above extracts. (*b*) Account for the change from the subjunctive to the indicative construction in line 182. (Ep. II). (*c*) What is the force of the tenses in '*Poteras-dixisse*'? (v. 328). (*d*) Give the syntax of the following cases: *Thebis*,

Apolline, *trimetris* (v. 252), *nullius*. (*e*) Explain the grammatical construction of *Hic et in Acci.....crimine turpi* (l. *c*).

3. (*a*) Derive and give the meaning of the following terms: *quincunx semis*, *peculi*, *aerugo*, *quinquatrus*, *aulaea*, *punctum*.

(*b*) Write explanatory notes on the following: (1) Munus Apolline dignum; (2) Helicona virentem; (3) Tyrrhena sigilla; (4) Herodis palmetis pinguibus; (4) Genus, natale .....albus et ater; (5) linenda cedro.

(*c*) Scan lines 189, 260 and 332, noting instances where the metre determines the sense or has a particular significance.

4. State (*a*) what is meant by *oratio obliqua*, (*b*) the changes that take place in Latin in converting direct into indirect narration, (*c*) when only is the indicative admissible in indirect narration?

5. Give (*a*) the conjunctions, with their meaning, that are chiefly construed with the subjunctive mood; (*b*) the principal cases in which the relative pronoun takes the subjunctive mood; (*c*) the rule for the sequence of tenses in dependent subjunctive clauses.

6. (*a*) Define the use of the following terms: (*fabulae*) *togatae*, *palliatae*, *praetextatae*, *cothurnus*, *soccus*.

(*b*) Write briefly on the following topics: (1) Origin and early improvements of Greek tragedy, (2) Old Greek comedy, (3) the proper length of a play, number of actors, and part of the chorus in tragedy, (4) the old Roman poets, to whom Horace alludes in the first Epistle of the Second book.

INTERMEDIATE EXAMINATION, 1889.

LATIN PROSE COMPOSITION.

THURSDAY, APRIL 4TH:—AFTERNOON, 2 TO 5.

Examiners,..... { REV. GEORGE WEIR, LL.D. / A. J. EATON, M.A., PH.D.

(A). The Aurunci, whose land was contiguous to Ecetra, sent ambassadors to Rome to complain that the Roman colony which had come to Ecetra was troublesome to the whole country, and particularly to them. These ambassadors, being introduced into the Senate, said that their countrymen could have easily repelled force by force, and that the Romans would find that more injuries could not be inflicted with impunity. The Romans thus replied: "No one of us wishes that injury should be done to you or any other state, but we who have contended with more formidable enemies are not the persons to be terrified by your threats." Both nations being thus irritated, a war ensued in which the Aurunci bravely opposed the Romans for a while, but were at length entirely defeated.

(B) On the 21st of June, some of the enemy, who had estates on our side of the river were struck with panic and took refuge with us. They stated that their leader, wishing to avenge both public and private wrongs, had spent his own fortunes and those of his friends in collecting large numbers of infantry and cavalry. [1] Two days ago he had measured out the last corn to his army, and, as the other crops were late, had really nothing left but the bare ground. He had assumed the power of life and death, and had so violated traditionary laws and institutions, that he was deserted by many of his countrymen, who had taken to flight, and had concealed themselves in the neighboring woods and cantons. They informed us, further, that he greatly hoped, by attacking us unawares at the third watch, to inflict some signal disaster

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THIRD YEAR.

LATIN.—LIVY, BOOK XXI.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, L.L.D.

1. Translate:—

(A) Ceterum ex quo die dux est declaratus, velut Italia ei provincia decreta bellumque Romanum mandatum esset, nihil prolatandum ratus, ne se quoque, ut patrem Hamilcarem, deinde Hasdrubalem, cunctantem casus aliquis opprimeret, Saguntinis inferre bellum statuit. quibus oppugnandis quia haud dubie Romana arma movebantur, in Olcadum prius fines—ultra Hiberum ea gens in parte magis quam in dicione Carthaginiensium erat—induxit exercitum, ut non petisse Saguntinos, sed rerum serie, finitimis domitis gentibus, iungendoque tractus ad id bellum videri posset. Cartalam urbem opulentam, caput gentis eius, expugnat diripitque; quo metu perculsae minores civitates stipendio inposito imperium accepere. victor exercitus opulentusque praeda Carthaginem novam in hiberna est deductus. ibi large partiendo praedam stipendioque praeterito cum fide exsolvendo cunctis civium sociorumque animis in se firmatis vere primo in Vaccaeos promotum bellum.

(B) Ab Gadibus Carthaginem ad hiberna exercitus rediit. atque inde profectus praeter Etovissam urbem ad Hiberum marituma ora ducit. ibi fama est in quiete visum ab eo iuvenem divina specie, qui se ab love diceret ducem in Italiam Hannibali missum: proinde sequeretur neque usquam a se deflecteret oculos. Pavidum primo nusquam circumspicientem aut respicientem secutum; deinde cura ingenii humani, cum, quidnam id esset, quod respicere vetitus esset, agitaret animo, temperare oculis nequivisse eum, vidisse post sese serpentem mira magnitudine cum ingenti

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[1] Use *Oratio Obliqua*.

arborum ac virgultorum strage ferri ac post insequi cum fragore caeli nimbum. tum, quae moles ea quidve prodigii esset, quaerentem audisse, vastitatem Italiae esse: pergeret porro ire nec ultra inquireret sineretque fata in occulto esse.

2. In Ext. (A) (1) *Provincia:*—discuss the derivation and meaning of this word. (2) *Quibus oppugnandis * * * arma movebantur:*—analyse this clause and show the construction. (3) *Ultra* Iberum :—On which side of the river, and why? Ext. (B) Turn the verbs and pronouns used in the *obliqua oratio* into the forms they would have in the *recta.*

3. Carefully construe the following extracts, adding an explanatory (grammatical) note where you see fit :—(*a*) Quia qua parte belli vicerant ea tum quoque rem gesturos Romanos credi poterat. (*b*) Omnibus fere visendi domos oblata ultro potestas grata erat, et jam desiderantibus suos et longius in futurum providentibus desiderium. (*c*) Quæ verecundia est, Romani, postulare vos uti vestram Carthaginiensium amicitiæ proponam·us cum qui id fecerunt crudelius quam Pœnus hostis perdidit vos socii prodideritis? (*d*) Tantusque simul maeror patres misericordiaque sociorum peremptorum indigne et pudor non lati auxilii et ira in Carthaginienses metusque de summa rerum cepit, velut si iam ad portas hostis esset, ut tot uno tempore motibus animi turbati trepidarent magis quam consulerent.

4. Explain the meaning, and give the etymology of the following words:—remigio, quinqiremes, provincia, cætratos, stipendium, sinu, fœdus, supplicatio, celoces, tumultuatum, inermes, calapultae, ballistæ, falarica.

5. Parse the following verbs, giving their principal parts :—praebuerit, fruendum, capessenda, haesisset, vicisset, fusum, cæderetur, permixtum esset, natus, versa, dedemus.

6. (*a*) Decline the following words :—os (both), plebs, interpres, pecus, creber, alter. (*b*) Write down the Perf., Sup., and Inf. of :—saucio, salio, volvo, luo, pando, fundo. (*c*) Illustrate the uses of the Gerund and Gerundive; and also of the supines in, *um* and *u.* (*d*) What cases do the following words take after them, severally :—expers, dives, potior, credo, utor, tenus, extra, coram, pro, propter.

7. Define the geographical position, giving modern names when you can of :—Zacynthus, Saguntum, Carthago, Carthago nova, Aegates, Ticinus, Sardos Corsosque et Istros.

8. Turn into Latin :—

(*a*) (1) I know not what to say. (2) I hope the matter will turn out well. (3) What was I to do? (4) To turn into ridicule. (5) So to say. (6) As far as I know.

(*b*) When the Tarquins had been driven out of Rome, they asked help from Lars Porsena of Clusium. And he promised to do what he could.

Therefore he collected an army of his allies, and came to Rome so quickly that the citizens could not destroy the Sublician Bridge. Then Horatius promised to defend the bridge while they were breaking it down. And so he, with Spurius Lartius and Titus Herminius, kept driving back the enemy. When the bridge was nearly broken down, the latter retreated into the city; but Horatius stayed at his post till the bridge fell with a great crash. Then having prayed Father Tiber to hold him up, he threw himself into the river, and, though weighed down by his arms, got out safe on the nearer bank. And the Fathers honoured him with a statue and other rewards, because (as they said) he had saved the city of Rome.

B. A. ORDINARY EXAMINATION, 1889.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 12.

LATIN.—{ TACITUS.—ANNALS BOOK II.
{ JUVENAL.—SATIRES, VIII. AND XIII.

Examiners..... { REV. GEORGE CORNISH, LL.D.
{ REV. GEORGE WEIR, LL.D.

1. Translate:—

(A) Sed æstate iam adulta legionum aliæ itinere terrestri in hibernacula remissæ; plures Cæsar classi inpositas per flumen Amisiam Oceano invexit. ac primo placidum æquor mille navium remis strepere aut velis inpelli: mox atro nubium globo effusa grando, simul variis undique procellis incerti fluctus prospectum adimere, regimen inpedire: milesque pavidus et casuum maris ignarus dum turbat nautas vel intempestive iuvat, officia prudentium corrumpebat. omne dehinc cælum et mare omne in austrum cessit, qui umidis Germaniæ terris, profundis amnibus, immenso nubium tractu validus et rigore vicini septentrionis horridior rapuit disiecitque naves in aperta Oceani aut insulas saxis abruptis vel per occulta vada infestas. quibus paulum ægreque vitatis, postquam mutabat æstu eodemque quo ventus ferebat, non adhærere ancoris, non exhaurir inrumpentis undas poterant: equi, iumenta, sarcinæ, etiam arma præcipitantur, quo levarentur alvei, manantes per latera et fluctu superurgente.

(B) Neque Maroboduus iactantia sui aut probris in hostem abstinebat, sed Inguiomerum tenens illo in corpore decus omne Cheruscorum, illius consiliis gesta quæ prospere ceciderint testabatur: væcordem Arminium et rerum nescium alienam gloriam in se trahere, quoniam tres vacuas legiones et ducem fraudis ignarum perfidia deceperit, magna cum clade Germaniæ et ignominia sua, cum coniunx, cum filius eius servitium adhuc tolerent. at se duodecim legionibus petitum duce Tiberio inlibatam Germanorum gloriam servavisse, mox condicionibus æquis discessum; neque pœnitere quod ipsorum in manu sit, integrum adversum Romanos bellum an pacem incruentam malint.

(C) Reperio apud scriptores senatoresque eorundem temporum Adgandestrii principis Chattorum lectas in senatu literas, quibus mortem Arminii promittebat, si patrandae neci venenum mitteretur; responsumque esse non fraude neque occultis, sed palam et armatum populum Romanum, hostes suos ulcisci. qua gloria aequabat se Tiberius priscis imperatoribus, qui venenum in Pyrrum regem vetuerant prodiderantque. ceterum Arminius abscedentibus Romanis et pulso Maroboduo regnum adfectans libertatem popularium adversam habuit, petitusque armis cum varia fortuna certaret, dolo propinquorum cecidit: liberator haud dubie Germaniae et, qui non primordia populi Romani, sicut alii reges ducesque, sed florentissimum imperium lacessierit, proeliis ambiguus, bello non victus.

2. Ext. (A) (*a*) æstate jam adulta :—At what period of the year? Give the corresponding phrase in Greek. (*b*) Oceano:—What case? Ext. (B) Turn the sentence "vaecordem Arminium * * adhuc tolerent" into oratio recta. (*d*) Vacuas legiones:—What interpretations of this have been suggested? (*e*) Ext. (C) Abscedentibus R. et pulso M.:—Why the difference of tenses? (*f*) Priscis imperatoribus :—Explain the reference.

3. (*a*) Translate:—(1) Phraates venerantium officia ad Augustum verterat partemque prolis firmandæ amicitiæ miserat. (2) Meminissent mode avaritiæ, crudelitatis, superbiæ. (3) Exclamat irent, sequerentur Romanas aves, propria legionum numina. (4) Sed Germanicus nondum comperto profectionem incusari Nilo subvehebatur. (5) Si limen obsideretur, si effundendus spiritus sub oculis inimicorum foret, quid deinde miserrimæ conjugi, quid infantibus liberis eventurum? (6) At si teneat exercitum, augeat vires, multa, quæ provideri non possint, fortuito in melius casura.

4. Mention (1) the chief peculiarities of Tacitus' style; (2) the period of time embraced in the Annals, Book II.; (3) the main incidents of the book.

5. Translate:—

(C) Nocte brevem si forte indulsit cura soporem,
Et toto versata toro jam membra quiescunt:
Continuo templum et violati numinis aras
Et, quod præcipuis mentem sudoribus urget,
Te videt in somnis; tua sacra et major imago
Humana turbat pavidum cogitque fateri.
Hi sunt, qui trepidant et ad omnia fulgura pallent,
Quum tonat, exanimes primo quoque murmure cœli;
Non quasi fortuitus, nec ventorum rabie, sed
Iratus cadat in terras et judicet ignis.
Illa nihil nocuit, cura graviore timetur
Proxima tempestas, velut hoc dilata sereno.

6. Translate the following Extracts, adding an explanatory note, grammatical or other, where you see fit:—

(*a*) Esto bonus miles, tutor bonus, arbiter idem
Integer; ambiguæ si quando citabere testis
Incertæque rei, Phalaris licet imperet, ut sis
Falsus, et admoto dictet perjuria tauro:
Summum crede nefas animam præferre pudori
Et propter vitam vivendi perdere causas.

Mitte Ostia, Cæsar,

(*b*) Mitte: sed in magna legatum quære popina;
Invenies aliquo cum percussore jacentem,
Permixtum nautis et furibus ac fugitivis,
Inter carnifices et fabros sandapilarum
Et resupinati cessantia tympana Galli.

(*c*) Sunt in Fortunæ qui casibus omnia ponunt,
Et nullo credunt mundum rectore moveri,
Natura volvente vices et lucis et anni,
Atque ideo intrepidi quæcunque altaria tangunt.
Est alius metuens, ne crimen pœna sequatur.

(*d*) Te nunc, delicias, extra communia censes
Ponendum? Qui tu gallinæ filius albæ,
Nos viles pulli nati infelicibus ovis?

7. Explain the following extracts:—

(1) Populus quod clamat Osiri invento; (2) Cecropides; (3) Trunco Hermae; (4) Ducunt epiredia; (5) Per conventus; (6) Idumæae incola portae; (7) Trabeam et diadema Quirini; (8) Syrma Antigones; (9) Mirmillonis in armis; (10) Multa contingere virga; (11) Sensus communis; (12) Perdere naulum.

8. Give the exact meaning and derivation, when you can, of the following terms used by Juvenal:—chirographa, pyxide, misellus, conchylia, sportula, coenacula, trabeam, diadema, alapas, triscurria, pulpita, ergastula. Name derivations in English from any.

9. Give (1) a short outline of Juvenal's life; (2) an estimate of his works; (3) an abstract of the XIIIth Satire.

B. A. ORDINARY EXAMINATION.

GREEK AND ROMAN HISTORY AND LATIN PROSE COMPOSITION.

APRIL 4TH AND 15TH:—AFTERNOON, 2 TO 5.

Examiners, ... { REV. GEORGE CORNISH, LL.D. / REV. GEORGE WEIR, LL.D.

(A) *From the close of the Peloponnesian War to the death of Philip.*

1. Sketch the general results to Greece of the defeat of Athens in the Peloponnesian War.

2. What causes led to the Spartan Supremacy?

3. Describe geographically, illustrating by a map if you can, the Chalcidic Peninsula, and point out its maritime and political importance and value.

4. Give an account of the events and pretexts which led to Philip's interference in the general affairs of Greece.

5. Write a sketch of the character and policy of Philip.

(B) *The Twelve Cæsars.*

1. Sketch the condition, socially and politically, of the Roman people at the time of the death of Julius Cæsar, indicating the chief causes that had led to it.

2. The character and policy of Augustus, with their general results to the Empire at large.

3. Military operations in Germany between A. D. 14-20;—were they successful?

4. Name the twelve Cæsars in the order of their succession, giving dates.

5. (*a*) Give an account of the contests for the throne in the years A. D. 68-70. (*b*) What important events happened in the reigns of Vespasian and Titus?

(C) *Latin Prose Composition.*

Marcus Livius, after returning from the Illyrian war, was accused of dividing the enemy's spoils unjustly, and was condemned by a sentence of the whole people, a disgrace which he took so much amiss that he not only retired into the country, but also for upwards of eight years avoided all intercourse with men. At length he was prevailed on to return to the city, and was offered the consulship. When all urged him to accept this office, he is said to have spoken thus:—"If I am worthy of being raised to this honour, why were you so unjust as to condemn me? If on the other hand I was deservedly punished, do you think that I ought to be again entrusted with power?" The Senators bade him remember that it was the part of a good citizen to forget the injuries inflicted by a fickle people; and Livius was at length induced to become the colleague of C. Claudius.

THIRD YEAR EXAMINATION FOR HONOURS IN CLASSICS.

I. GREEK.

TUESDAY, APRIL 23RD :—AFTERNOON, 2 TO 5.

Examiner, ...REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts, adding an explanatory note where you deem it necessary :—

Herodotus, Book VIII. (A), chaps. 43-44; and (B) chap. 98.

2. (*a*) Explain the geographical references of ext. (A). (*b*) Characterise the style of Herodotus, and contrast it with that of Thucydides

3. Point out the chronological relation of Thucydides, Herodotus and Xenophon in the history of the Peloponnesian War.

3. Translate :—

Xenophon, Hellenics (C), Bk. I., chap. 6, §§ 6-11, inclusive; and (D) Bk. II., chap. 4, §§ 16-17, inclusive.

4. Comment on the character of Callicratidas as contrasted with Lysander. (*b*) Translate and explain the following military or naval terms :—(1) *θέσθαι τὰ ὅπλα*, (2) *συμφράξαντες*. (3) *ἐπειδὴ ὡρμίσαντο*. (4) *οἱ ἐπιβάται*. (5) *δύο λόχοι βοηθήσαντες*, (6) *τὰς δὲ λοιπὰς ὑπο τῷ τείχει ἀνείλκυσε*. (7) *τὰ παραῤῥύματα παραβάλων*. (8) *ἐπί μιᾶς τεταγμένοι*. (9) *ἵνα μὴ διέκπλουν διδοῖεν*. (10) *κατὰ πόδας πλέοντες*. (11) *παρετάξαντο ἐν μετώπῳ*. (12) *ἡ Πάραλος*.

5. Translate the following, commenting on the dialectic peculiarities :—*Εὑρεῖ τὰ κᾶλα* (al. *τὰ καλά*). *Μίνδαρος ἀπεσσούα*. *πεινῶντι τῶνδρες*. *Ἀπορίουες, τί χρὴ δρᾶν*. Plutarch speaks of this despatch as *γράμματα Λακωνικῶς φράζοντα* :—why *Λακωνικῶς* ?

6. What questions have been raised touching the genuineness of the later books of the Hellenics ?

THIRD YEAR EXAMINATION FOR HONOURS.

II. GREEK.

THURSDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate with an explanatory note when you deem it necessary :—

(A) Pindar, Olymp. XIII., vss. 24-46.

2. Explain the meaning of the following epithets, etc., from this

ode:—*ἄμερον, ἀγλαοκύρον, ὁμότροπος, χρύσεαι, πολυάνθεμοι, βοηλάτα, δίδυμον, ἀβλαβῆ, ποδαρκής, ἴδιος, πυκνότατον, χρυσάμπυκα.*

3. (*a*) Translate the following phrases from Pindar, noting differences of interpretation:—(1) *ἀκέρδεια λέλογχεν θαμινὰ κακαγόρος,* (2) *ὁ μέγας δὲ κίνδυνος ἀναλκιν οὐ φῶτα λαμβάνει.* (3) *ἤτοι βροτῶν γε κέκριται πεῖρας οὐ τι θανάτου.* (4) *διαπειρά τοι βροτῶν ἔλεγχος.* (5) *τεκμαίρει χρῆμ' ἕκαστον.* (6) *Ἀΐδα τοι λάθεται ἄρμενα πρῖξαις ἀνήρ.* (7) *ἀγαθοὶ δὲ καὶ σοφοὶ κατὰ δαίμον' ἄνδρες ἐγένοντο.* (8) *μαχον δὲ κρυψαι τὸ συγγενὲς ἦθος.* (*b*) What is the *Schema Pindaricum?* (*c*) Characterise the dialect of Pindar.

4. Æschylus, Prometheus Vinctus, (B) vss. 246-254 and (C) 1040-1070.

5. (*a*) Set forth as carefully as you can the import of the particles used in the dialogue of ext. (B). (*b*) *εἰσορᾶν,*—what use of the Infin.? (*c*) *χαλᾷ κακῶν,*—construe *κακῶν* and supply the elipsis. (*d*) *ῥιπτέσθω· ῥίψειε,*—note the difference of moods. (*e*) *ξυχώσειω, ῥίψειε,*—what are the subjects of these verbs? (*f*) *ἡ τοῦδε τύχη,*—nte various readings. (*g*) *παρέσυρας,*—what is the metaphor in this? (*h*) *προδόται,*—what is the supposed political reference? (*i*) *ἀπέπτυσε,*—what use of the Aorist?

6. Write explanatory notes on:—(1) *τύχαι Ἄλαντος.* (2) *Τυφῶνα θοῦρον.* (3) *ἱπούμενος.* (4) *ἀχαρις.* (5) *ἐξωμμάτωσα.* (6) *ἐς τε Πυθῶ κἀτὶ Δωδώνης.* (7) *ἀκοιμήτῳ ῥεύματι.* (8) *Σκύθῃ οἶμον.* (9)*ναρθηκοπλήρωτον.* (10) *ἀπέδιλος.* (*c*) Comment on the use by Æschylus of compound words and accumulation of epithets. (*d*) Note various readings and interpretations in vss. (Ed. Dindor):—2, 49, 113, 275, 378, 677.

7. Translate:—(D) Aristophanes, The Frogs, vss. 686-702; and (E) vss. 1482-1499.

8. (*a*) Explain briefly the political references o ext. (D). Explain also the following from the Frogs:—(1) *κωδωνίσω.* (2) *κόβαλα.* (3) *ἐς Κεραμεικόν.* (4) *δύ' ὀβολὼ μισθὸν λαβών.* (5) *Ὄνου Πόκας.* (6) *ἐφυσε φράτερας·* (7) *οὐ Χίος ἀλλα Κεῖος.* (*b*) Analyse the metres of vss. 686 and 1482.

9. Write a note on the character of the Dramas of Aristophanes, as to their religious, political, and philosophical tendencies.

THIRD YEAR EXAMINATION FOR HONOURS.

III. LATIN.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL. D.

1. Translate, adding an explanatory note where you deem it necessary, the following passage:—

Tacitus, Histories I. (A) Chap. 2.

2. Explain:—(1) Tesserarium Speculatorum. (2). Optionem. (3) Manipuares. (4) Praeire sacramentum. (5) Urgentibus mathematicis. (6) Excubias agenti. (7) In agmine, in itinere, in stationibus. (8) Bis et vicies millies sestertium. (9) Publica expectatio. (10) Comitia imperii transigit.

3. Translate:— (B) chap. 50.

4. (*a*) Write short notes on the historical references of ext. (B). (*b*) "Duos omnium mortalium impudicitia, iguavia, luxuria, deterrimos":—Is this characterisation too severe

5. Translate:—(C) chap. 74.

6. (*a*) *Epistulas:*—Singular or plural in meaning, and why? (*b*) *Urbanas cohortes*:—write an explanatory note on these. (*c*) Mediolanum ac Novariam et Eporediam et Vercellas; Poenino itinere, Raeticis jugis; Lugdunenses Viennensesque; Treviri et Lingones;—define the geographical position and give modern names. (*d*) "Poeninus":—is this the correct orthography? Give the derivation of the word, and point out its occurrence in Celtic names of mountains. (*e*) Distinguish between *Vienna* and *Vindobona*.

7. Translate the following extt., adding an explanatory note where you think proper:—

(1) Proximan quamque culpam antequam paeniteret ultum ibat. (2) Nemo enim adhuc cui imputaretur. (3) Unde plures erant, omnes fuere. (4) Neque modum oneris quisquam neque genus quaestus pensi habebat. (5) Sine more et ordine militae, ut praetorianus aut legionarius insignibus suis distingueretur. (6) Utrisque frustra fuit, Vitellianis impune, per tantam hominum multitudinem mutua ignorantia fallentibus: Othoniani novitate vultus, omnibus in vicem gnaris, prodebantur.

8. Explain the primary meaning of, and the distinction between, the terms *Annales* and *Historiæ*.

9. Give a list of the Roman Emperors down to the period of the death of Tacitus, and mention those during whose reign he lived. To what so-called age of the language and literature of Rome is he to be assigned? What writers were his contemporaries?

10. Translate (at sight):—

(A) Cæterum ut humanæ virtutis actum exsequamur, cum Annibal Capuam, in qua Romanus exercitus erat, obsideret, Vibius Accuæus, Peli-

gnæ cohortis præfectus, vexillum trans Pœnicum vallum proiecit, seipsum suosque commilitones, si eo hostes potiti essent, exsecratus: et ad id petendum subsequente cohorte, primus impetum fecit. Quod ut Valerius Flaccus, tribunus tertiæ legionis aspexit, conversus ad suos, Spectatores, inquit, ut video, alienæ virtutis huc venimus: sed absit hoc dedecus a sanguine nostro, ut Romani gloria cedere Latinis velimus. Ego certe aut speciosam optavi mortem, aut felicem audaciæ exitum. Vel solus igitur præcurrere paratus sum. His auditis, Pedan ius Centurio, convulsum signum dextra retinens: Iam hoc, inquit, intra hostile vallum mecum erit: proinde sequantur, qui id capi nolunt: et cum eo in castra Pœnorum irrupit, totamque secum traxit legionem. Ita trium virorum fortis temeritas Annibalem, paulo ante spe sua Capuæ politorem, ne castrorum quidem suorum potentem esse passa est.

Valerius Maximus.

THIRD YEAR EXAMINATION FOR HONOURS.

IV. LATIN.

TUESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, adding an explanatory note where you deem it necessary, the following passage:—

Juvenal (A) Sat. viii., vss. 254-268, and (B) x., vss. 54-77.

2. (*a*) Note the tense and mood of *laxabant*, *deceret*, *miraretur*, and explain the use of the Genitive in *legum* prima securis. (*b*) What variants occur in vss. 38, 42, 68, 155, 171 in Sat. viii.?

3. (*a*) Explain briefly the political references in ext. (B). (*b*) Explain also:—(1) Genua incerare deorum. (2) Cretatum bovem. (3) Bene habet (turn into Greek). (4) Diceret Augustum. (5) Turba Remi. (6) Nurtia Tusco. (*c*) Comment on the proper arrangement of the dialogue in ext. (B), and give your arrangement. (*d*) Satire X. has been regarded by some as inferior to VIII.:—In what respects?

4. Translate:—

Persius, Sat. VI. (B), vss. 40-60.

5. (*a*) Cite passages from Horace which Persius has imitated in these Satires. (*b*) Explain the meaning of:—(1) Tetrico pectine. (2) Veterum primordia vocum. (3) Hibernat meum mare. (4) Coenare sine uncto. (5) Messe tenus propria vive. (6) Sapere nostrum hoc maris expers. (7) Lutea gausapa. (8) Exossatus ager.

6. Translate the following extt. from Sat. V., noting differences of interpretation in any : –

(*a*) Quumque iter ambiguum est, et vitæ nescius error
Diducit trepidas ramosa in compita mentes,
Me tibi supposui: teneros tu suscipis annos
Socratico, Cornute, sinu; tunc fallere sollers
Apposita intortos extendit regula mores,
Et premitur ratione animus vincique laborat,
Artificemque tuo ducit sub pollice vultum.

(*b*) Petite hinc juvenesque senesque
Finem animo certum serisque viatica canis!
"Cras hoc fiet." Idem cras fiet. "Quid? quasi magnum
Nempe, diem donas!" Sed quum lux altera venit,
Jam cras hesternum heu! consumsimus: ecce aliud cras
Egerit hos annos, et semper paulum erit ultra.

(*c*) Mendose colligis, inquit
Stoicus hic aurem mordaci lotus aceto;
Hoc, reliqua accipio, *licet ut volo vivere*, tolle.
"Vindicta postquam meus a prætore recessi,
Cur mihi non liceat jussit quodcunque voluntas,
Excepto si quid Masuri rubrica vetavit?"

(*d*) Mane piger stertis. Surge, inquit Avaritia; heia
Surge. Negas, instat, Surge, inquit. "Non queo." Surge.
"Et quid agam?" Rogitas? saperdas advehe Ponto,
Castoreum, stuppas, hebenum, thus, lubrica Coa;
Tolle recens primus piper ey sitiente camelo.

7. (*a*) Comment on the relative excellences, peculiarities of style, and mode of dealing with their subject-matter of Juvenal and Persius. Whom did each take as his moded? (*b*) Write a note on the origin and development of Roman Satire, pointing out in what respects it differed from the satire of the Greeks.

8. (C) Terence, Adelphi, Act iv., Sc. 7, vss. 28-44.

9. (*a*) Which is the correct form, Aedepol or Edepol? Also explain the forms:—*satur*, *sis*, *dis*, *quor*, *prorsus*. (*b*) Construe and explain the following formulæ:—(1) Ut te magnus perdat Juppiter. (2) Pro divom fidem. (3) Ita me di ament ut video tuam ineptiam. (4) O Juppiter, hancine vitam.

10. Point out the chief points of difference as regards style and originality between Plautus and Terence.

THIRD YEAR EXAMINATION FOR HONOURS.

V, GREEK AND ROMAN HISTORY.

Grote :—Vols. I.-IV.
Mommsen :—Vols. I.-II.
Arnold :—Vols. I.-III.

THURSDAY, APRIL 25TH :—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the Latin equivalents of the names of the leading Greek deities and heroes. (*b*) Narrate the legend of Demeter. (*c*) Distinguish between Iacchus and Dionysus. (*d*) What mental conditions among the early Greeks were favourable for the origin and growth of mythes?

2. Give a summary of Grote's chapter on the state of society and manners as exhibited in Grecian Legend.

3. (*a*) An account of the physical geography and limits of Greece. (*b*) Discuss the causes that operated to prevent the Greeks from becoming a united political community.

4. Give the substance of Grote's chapter on the Asiatic Ionians, with a short account of the Ionic Revolt.

5. The domestic and foreign policy of Pericles. Sketch the constitutional changes that took place under his administration.

6. "On this Roman household was based the Roman state, as respected both its constituent elements and its form:"—describe the household, and give a summary of Mommsen's account of the original Constitution of Rome.

7. The political and commercial relations of Italy with foreign nations.

8. Describe the changes in the Constitution after the Abolition of the Monarchy.

9. The ethnology of the Gauls, and their migrations into Italy.

10. The state of Italy after the Roman conquest. The Latin Colonies, and the various tenures of land.

THIRD YEAR EXAMINATION FOR HONOURS.

VI. GREEK AND LATIN PROSE COMPOSITION.

WEDNESDAY, APRIL 10TH :—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek :—

1. The philospher counted it a dishonourable thing not to render assistance to those in distress. 2. Prudent and patriotic citizens set a very

high value upon his services to the state. 3. Because of his goodness and diligence his companions rewarded the soldier with a chaplet of flowers. 4. It is not every man that can work well and achieve success. 5. So senseless was he as actually to prefer slavery to freedom, and poverty to wealth. 6. But for my friends, said he, it would long ago have been all over with me; and even now, I hardly know which way to turn.

(B) Translate into Latin:—

Hannibal was much elated at the victory he had won. He had, he said beaten two Roman armies; after enduring those many difficulties and dangers on the march from Spain, the happiest success had at last befallen his troops; and it was doubtful whether any force remained which could hinder his march on Rome. On the other hand, Sempronius in vain tried to disguise with how great a disaster he had been overwhelmed. He sent a letter to Rome in these words: "I have fought a battle, and nothing but the storm has prevented me from inflicting a decisive defeat upon the enemy." On hearing this, the people of Rome asked, How came it then that Hannibal had pitched his camp on the very ground where the battle was fought? how came it that the Gauls has joined him to a man? that the Roman camp had been broken up? that what remained of the Roman armies was holding itself terror-stricken in the fortified camp before Placentia, or behind the walls of Cremona? finally, that Hannibal's cavalry was ranging at will over the plains of Cisalpine Gaul?

B.A. EXAMINATIONS FOR HONOURS IN CLASSICS.

I. GREEK POETS.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate (with an explanatory note where you deem it necessary):—

Æschylus, Prometheus Vinctus, (A) vss. 246-254 and (B) 1040-1070.

2. (*a*) Set forth as carefully as you can the import of the particles used in the dialogue of ext. (A). (*b*) εἰσορᾶν,—what use of the Infin.? (*c*) χαλᾷ κακῶν,—construe κακῶν and supply the ellipsis. (*d*) ῥιπτέσθω· ῥίψειε,—note the difference of moods. (*e*) ξυγχώσειεν, ῥίψειε,—what are the subjects of these verbs? (*f*) ἡ τοῦδε τύχη,—note various readings. (*g*) παρέσνρας,—what is the metaphor in this? (*h*) προδότας,—

what is the supposed political reference? (*i*) *ἀπέπτυσα*,—what use of the Aorist?

3. Write explanatory notes on:—(1) *τύχαι Ἄτλαντος*. (2) *Τυφῶνα θοῦρον*. (3) *ἱπούμενος*. (4) *ἀχαρις*. (5) *ἐξωμμάτωσα*. (6) *ἐς τε Πυθὼ κἀπὶ Δωδώνης*. (7) *ἀκοιμήτῳ ῥεύματι*. (8) *Σκύθῃ οἴμον*. (9) *ναρθηκοπλήρωτον*. (10) *ἀπέδιλος*. (*c*) Comment on the use by Æschylus of compound words and accumulation of epithets.

4. Translate:—

(C) Sophocles, Antigone, vss. 332-375.

5. (*a*) Analyse the metres of strophe *α* and strophe *β* in ext. (C). (*b*) Derive and explain the term *Stasimon*, and set forth the theme of the above Stasimon, and show how the *Stasima* of this Drama are severally connected, and their bearing on the action of the play. (*c*) The following variants occur in the same ext.; translate and comment on them:—(1) *πολλά τε—τά*. (2) *πολεῖον—πολεύων*. (3) *περιφραδὴς—ἀριφραδής*. (4) *παραίρων—παρείρων—περαίνων—γεραίρων*. (5) *ἀστυνόμους ὀργὰς ἐδιδάξατο*:—give different interpretations.

6. Translate the following extracts from the Antigone, adding an explanatory note where you see fit:—

(*a*) *ἔχεις τί κεἰσήκουσας; ἢ σε λανθανει,*
πρὸς τοὺς φίλους στείχοντα τῶν ἐχθρῶν κακά;

(*b*) *τί δ' ὦ ταλαῖφρον εἰ τάδ' ἐν τούτοις, ἐγὼ*
λύουσ' ἂν ἢ 'φάπτουσα προσθείμην πλέον;

(*c*) *οὔτ' ἂν κελεύσαιμ' οὔτ' ἂν εἰ θέλοις ἔτι*
πράσσειν ἐμοῦ γ' ἂν ἡδέως ὀρῴης μέτα.

(*d*) *ἐᾶν δ' ἄθαπτον καὶ πρὸς οἰωνῶν δέμας*
καὶ πρὸς κυνῶν ἐδεστόν αἰκισθέντ' ἰδεῖν.

(*e*) *λόγοι δ' ἐν ἀλλήλοισιν ἐρρόθουν κακοί,*
φύλαξ ἐλέγχων φύλακα κἂν ἐγίγνετο
πληγὴ τελευτῶσ' οὐδ' ὁ κωλύσων παρῆν.

7. Translate:—

(D) Euripides, Medea, vss. 708-730, and (E) vss. 1271-1292.

8. (*a*) Are the children speaking in ext. (E) on the stage? In what other plays do children speak? (*b*) *ἀρκύων ξίφους*,—comment on this metaphor. (*c*) *ὡς ἀρ' ἦσθα*,—note the tense and cite other instances both in Greek and in Latin. (*d*) Give the various readings of vs. 708. (*e*) *σου προξενεῖν*,— explain the custom referred to. (*f*) *κοὐ σε μὴ μεθῶ τινι*:—"Exigit sermonis ratio, ut voculae *οὐ μὴ* vel cum Futuro Indi-

cativo vel cum Aoristo Altero formae Subjunctivæ construuntur." *Dawes.* "οὐ μὴ cum Futuro, vetat; cum Aoristo negat." *Elmsley.* Comment on these canons, giving Jelf's remarks.

9. Explain the following from the Medea :—(1) Συμπληγάδας. (2) Πειρήνης ὕδωρ. (3) Θέμιν εὐκταίαν. (4) βραβεὺς λόγου. (5) τοῖς Σισυφείοις. (6) ἄκροισι λαίφους κρασπέδοις ὑπεκδραμεῖν. (7) πρὸς βαλβῖδα λυπηρὰν βίου.

B.A. EXAMINATION FOR HONOURS.

II. GREEK POETS.

WEDNESDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate with an explanatory note when you deem it necessary :—

(A) Pindar, Olymp. XIII., vss. 24-46.

2. Explain the meaning of the following epithets, etc., from this ode :—ἄμερον, ἀγλαοκόυρον, ὁμότροπος, χρύσεαι, πολυάνθεμοι, βοηλάτα, δίδυμον, ἀβλαβῆ, ποδαρκής, ἴδιος, πυκνότατον, χρυσάμπυκα.

3. (*a*) Translate the following phrases from Pindar, noting differences of interpretation :—(1) ἀκέρδεια λέλογχεν θαμινὰ κακαγόρος. (2) ὁ μέγας δὲ κίνδυνος ἀναλκιν οὐ φῶτα λαμβάνει. (3) ἤτοι βροτῶν γε κέκριται πεῖρας οὔ τι θανάτου. (4) δίαπειρά τοι βροτῶν ἔλεγχος. (5) τεκμαίρει χρῆμ' ἕκαστον. (6) Ἀίδα τοι λάθεται ἁρμενα πράξαις ἀνήρ. (7) ἀγαθοὶ δὲ καὶ σοφοὶ κατὰ δαίμον' ἄνδρες ἐγένοντο. (8) ἄμαχον δὲ κρύψαι τὸ συγγενὲς ἦθος. (*b*) What is the *Schema Pindaricum?* (*c*) Characterise the dialect of Pindar.

4. Translate :—

(B) Aeschylus, Seven against Thebes, vss. 245-263.

5. (*a*) Comment on the meaning of :—Ἐλεδεμνάς, πύλαις ἑβδόμαις, Λύκειος, ὠγυγίαν, καπηλεύσειν μάχην, ξηροῖς ἀκλαύτοις ὄμασιν, Ἑβδομαγέτης. (*b*) In what repute was this play held by the ancients? (*c*) Scan the following vss., and point out any metrical peculiarities :—

Παρθενοπαίους Ἄρκας· ὁ δὲ τοιόσδ' ἀνήρ.
Ἱππομέδοντος σχῆμα καὶ μέγας τύπος.
Μεγαρεύς, Κρέοντος σπέρμα, τοῦ Σπαρτῶν γένους.
Ὅστις φυλάσσει πρᾶγος ἐν πρύμνῃ πόλεως.

6. Translate :—(C) Aristophanes, The Frogs, vss. 686-702; and vss. 1482-1499.

7. (*a*) Explain briefly the political references of ext. (C). Explain also the following from the Frogs:—(1) *κωδωνίσω*. (2) *κόβαλα*. (3) *ἐς Κεραμεικόν*. (4) *δύ' ὀβολὼ μισθὸν λαβών*. (5) *Ὅιου Πύκας*. (6) *ἔφυσε φράτερας*· (7) *οὐ Χῖος ἀλλὰ Κεῖος*. (*b*) Analyse the metres of vss. 686 and 1482.

8. Translate:—(D) Theocritus, Idyl I., vss. 29-51.

9. (*a*) What interpretations have been suggested of vs. 51:—*φατ πρὶν * * * καθίξη*? (*b*) Derive and define the term *εἰδύλλιον*, and name writers of this kind of poetry in ancient and modern times. (*c*) Write an explanatory note on the metre of Theocritus.

10. (*a*) Parse, noting the dialect, the following words:—*αἶκα, χιμάρω, τεῖδε, ᾧδήκαντι, ὄρχως, ἤνθον, τιν, παρῆμεν, μέσφα, ἀπέσβης, λύκος, ποθόρησθα*. (*b*) Point out forms most akin to Latin forms.

11. Translate:—

(E) Hesiod, Works and Days, vss. 223-235.

12. (*a*) Parse and derive the following words:—*τέθηλε, μεμηλότα ζείδωρος, πόποι, Δᾶν, ψέ, πρόσπλατοι, μόλης, ἐτάθη, ἀνήμεροι*. (*b*) What is the Aeolic Digamma? Point out any traces of it. Give the exact meaning of the title *Ἔρ α καὶ Ἡμέραι*. (*c*) When and where did Hesiod live

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B. A. EXAMINATION FOR HONOURS.

III. GREEK PROSE WRITERS.

TUESDAY, APRIL 9TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate (adding an explanatory note where you deem it necessary in any of the extt. given below):—

(A) Herodotus, Bk. IX., ch. 106.

2. Translate the following extracts, adding an explanatory note on peculiarities of construction, &c.:

(*a*) *τοῖσι δὲ Θεσσαλίης ἡγεομένοισι οὔτε τὰ πρὸ τοῦ πεπρημένα μετέμελε οὐδὲν, πολλῷ τε μᾶλλον ἐπηγον τὸν Περσην*.

(*b*) *κατὰ μὲν γὰρ τὸ ἰσχυρὸν Ἕλληνας ὁμοφρονέοντας, οἷπερ καὶ πάρος ταὐτὰ ἐγίνωσκον, χαλεπὰ εἶναι περιγίνεσθαι καὶ ἅπασι ἀνθρώποισι*.

(*c*) *ταῦτα δὲ τὸ δεύτερον ἀπέστελλε, προέχων μὲν τῶν Ἀθηναίων οὐ φιλίας γνώμας, ἐλπίζων δέ σφεας ὑπήσειν τῆς ἀγνωμοσύνης, ὡς δοριαλώτου ἐούσης πάσης τῆς Ἀττίκης χώρης ἐούσης ἤδη ὑπ' ἐωυτῷ*.

(*d*) *ἀσκέων δὲ πεντάεθλον παρὰ ἓν πάλαισμα ἔδραμε νικᾶν Ὀλυμπιάδα.*

3. (*a*) Explain the following:—*ὑακίνθια, κρησφύγετον, τὸν λόχον τὸν Πιτανήτην, γενομένης λέσχης, τοὺς ἱρένας ἐθαψαν.* (*b*) *ἐπιστάμενοι τὰ Δακεδαιμονίων φρονήματα, ὡς ἄλλα φρονεόντων καὶ ἄλλα λεγόντων*:—to what extent was this imputation of double-dealing on the part of the Lacedemonians justified? Cite parallel instances of such an imputation in ancient and modern times.

4. Translate:—

(B) Xenophon, Hellenics, Bk. I., chap. 6, §§ 6-11, inclusive; and (C) Bk. II., chap. 4, §§ 16-17, inclusive.

5. Comment on the character of Callicratidas as contrasted with Lysander. (*b*) Translate and explain the following military or naval terms:—(1) *θέσθαι τα ὅπλα.* (2) *συμφράξαντες.* (3) *ἐπειδὴ ὡρμίσαντο.* (4) *οἱ ἐπιβάται.* (5) *δύο λόχοι βοηθήσαντες.* (6) *τὰς δὲ λοιπὰς ὑπο τῷ τειχει ἀνείλκυσε.* (7) *τὰ παραῤῥύματα παραβάλων.* (8) *ἐπί μιᾶς τεταγμένοι.* (9) *ἵνα μὴ διέκπλουν διδοῖεν.* (10) *κατὰ πόδας πλέοντες.* (11) *παρετάξαντο ἐν μετώπῳ.* (12) *ἡ Πάραλος.*

6. Translate the following commenting on the dialectic peculiarities:—*Ἐῤῥει τὰ κᾶλα* (al. *τὰ καλά*). *Μίνδαρος ἀπεσσυύα. πεινῶντι τῶνδορες. Ἀπορίομες, τίχρὴ δρᾶν.* Plutarch speaks of this despatch as *γράμματα Λακωνικῶς φράζοντα*:— why *Λακωνικῶς*?

7. Translate:—

(D) Æschines, Contra Ctesiphontem, §§ 71-72, and § 160.

8. (*a*) Explain the references in § 160. (*b*) Characterise the style of Æschines' oratory, and his method of conducting the case against Ctesiphon. (*c*) To what causes may his failure be attributed?

B.A. EXAMINATION FOR HONOURS.

IV. GREEK PROSE WRITERS.

WEDNESDAY, APRIL 17TH:—AFTERNOON, 2 TO 5.

Examiners..... .....REV. GEORGE CORNISH, LL.D.

1. Translate, adding an explanatory note where you deem it necesary:—

(A) Herodotus, Book VIII., chaps. 43-44.

2. (*a*) Explain tne geographical references of ext. (A). (*b*) Characterise the style of Herodotus, and contrast it with that of Thucydides.

3. Translate :—

(B) Thucydides, Book VII., chap. 19.

4. (*a*) In ext. (B) explain the phrase *ἐν τοῖς πρῶτοι*. How far was Decelea from Athens? (*b*) Translate, and explain the syntax of the following passages in Book VII. :—(1) *ἐφθασαν περιοικοδομήσαντες καὶ παρελθόντες τὴν τῶν Ἀθηναίων οἰκοδομίαν, ὥστε μηκέτι μήτε αὐτοὶ κωλύεσθαι ὑπ' αὐτῶν.* (c. 6). (2) *ἢ τῷ ὀχλῳ πρὸς χάριν τὶ λέγουτες.* (c. 8). (3) *τοῖς τε γὰρ ἐπιχειρήμασιν ἐώρων οὐ κατορθοῦντες καὶ τοὺς στρατιώτας ἀχθομένους τῇ μονῇ.* (c. 47). (4) *παύσαντες τὴν φλόγα καὶ τὸ μὴ προσελθεῖν ἐγγὺς τὴν ὁλκάδα τοῦ κινδύνου ἀπηλλάγησαν.* (c. 53). (5) *νομίζων οὐ τὸ ὑπομένειν ἐν τῷ τοιούτῳ ἑκόντας εἶναι καὶ μάχεσθαι σωτηρίαν.* (c. 81). (c) Distinguish between—Σικανοί, Σικελοί, and Σικελιῶται.

5. Translate :—

(C) Demosthenes, De Corona, Cap. 270 :—*Οὐκ ἀπορῶν δ' ὅτι χρὴ * * πόθεν ἀρ ἄλλοθεν*; How do you construe and explain *οὐδὲ γὰρ ὧν ἔτυχεν ἦν*?

6. (*a*) Translate, with explanatory notes, the following :—*Ἐπὶ Μνησιφίλου ἄρχοντος, συγκλήτου ἐκκλησίας ὑπὸ στρατηγῶν, γενομένης καὶ Πρυτάνεων καὶ βουλῆς γνώμῃ, Μαιμακτηριῶνος δεκάτῃ ἀπίοντος, Καλλισθένης Ἐτεονίκου Φαληρεὺς εἶπε.* (*b*) Translate the following extract :—*Δεδόχθαι τῷ δάμῳ τῷ Βυζαντίων καὶ Περινθίων Ἀθαναίοις δόμεν ἐπιγαμίαν πολιτείαν ἔγκτασιν γᾶς καὶ οἰκιᾶν, προεδρίαν ἐν τοῖς ἀγῶσι, πόθοδον ποτὶ τὰν βωλὰν καὶ τὸν δᾶμον πράτοις μετὰ τὰ ἱερά, καὶ τοῖς κατοικέειν ἐθέλουσι τὰν πόλιν ἀλειτουργήτοις ἠμεν πασᾶν τᾶν λειτουργιᾶν·* (*c*) Name the dialect of this extract, and state in what districts of Greece it was used.

7. Translate :—

(D) Aristotle, De Poetica, Chap. 22, §§ 1-4 inclusive.

8. (*a*) Derive and define the following terms :—*προβλήματα, λύσεις. ἐποποική, διηγηματική, παραλογισμός, μεταφορά, πτῶσις, στοιχεῖον, σύνδεσμος, ῥῆμα. ἔστι δὲ πάσης τραγῳδίας τὸ μὲν δέσις τὸ δὲ λύσις.* (*b*) What is the condition of the Text of this treatise, and how may it be accounted for ?

9. Translate :—

(E) Plato, de Republica, Bk. II., Chap. 17, down to *κομιδῇ μὲν οὖν.*

10. Write an explanatory note on what *ἡ παιδεία*, among the Greeks included.

B.A. EXAMINATION FOR HONOURS.

V. LATIN PROSE WRITERS.

WEDNESDAY, APRIL 10TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it:—

Tacitus, Annals, Book II. (A) chap. 34, and (B) chap. 68.

2. (*a*) In ext. (A) comment on the force of the Tense of *abire*, *cedere*, and *relinquebat*. *Augusta*:—What was her name? *Adfuturum*:—Explain the legal import of this. *Tempus atque iter ducens*:—comment on the form and meaning of this phrase. (*b*) Sketch the state of public life at Rome as indicated by this chap. (*c*) Explain briefly the references, historical, geographical, or other, in the following:—(1) Trucidantium Crassum. (2) Arsacidarum sanguine. (3) Apud Dahas. (4) Ad census Galliarum. (5) Insula Batavorum, Albanos Heniochosque, Amnem Pyramum. (6) Saliari carmine. (7) Evocatus.

3. Translate:—

Livy, Book XXI.:—(C) Chap. 35 (from "nono die" to end).

4. Carefully construe the following extracts, adding an explanatory (grammatical) note when you see fit:—(*a*) Quia qua parte belli vicerant ea tum quoque rem gesturos Romanos credi poterat. (*b*) Omnibus fere visendi domos oblata ultro potestas grata erat, et jam desiderantibus suos et longius in futurum providentibus desiderium. (*c*) Quæ verecundia est, Romani, postulare vos uti vestram Carthaginiensium amicitiæ proponamus, cum qui id fecerunt crudelius quam Pœnus hostis perdidit vos socii prodideritis? (*d*) Tantusque simul maeror patres misericordiaque sociorum peremptorum indigne et pudor non lati auxilii et ira in Carthaginienses metusque de summa rerum cepit, velut si iam ad portas hostis esset, ut tot uno tempore motibus animi turbati trepidarent magis quam consulerent. (*e*) Pollicitusque est quo animo priore bello populum Romanum juvenis adjuvisset, eo senem adjuturum; frumentum, vestimentaque sese legionibus consulis sociisque navalibus gratis præbiturum; grande periculum Lilybæo maritimisque civitatibus esse, et quibusdam volentibus novas res fore.

4. (*a*) To what extent may the characteristic features of the religion of the Romans be inferred from the prodigies, superstitions and usages referred to in chap. 62 of this book? (*b*) Write short explanatory notes on:—Sortes extenuatas, lectisternium uventi, libros adire, novemdiale sacrum-lustrata, supplicatio. (*c*) Describe the route of Hannibal from Spain into Italy. (*d*) From what tribes did he recruit his forces? How is the comparative fewness of Carthaginian soldiers in his army to be accounted for?

5. Translate :—

(E) Cicero, De Officiis, Book II., chap. iv. :—"Qui denique" to end.

6. "Ita propria est ea præceptio *Stoicorum, Academicorum, Pripateticorum* (I., chap. ii)" :—Translate, and briefly explain the reference to these several schools, as to their views on the question of happiness and virtue.

7. Contrast Livy and Tacitus in respect of style, method of treatment, etc. Which of them is the more trustworthy, and on what grounds?

B. A. EXAMINATION FOR HONOURS.

VI. LATIN PROSE WRITERS.

TUESDAY, APRIL 23rd :—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it :—

Tacitus, Histories I. (A) Chap. 2.

2. Explain :—(1) Tesserarium Speculatorum. (2). Optionem. (3) Manipulares. (4) Præire sacramentum. (5) Urgentibus mathematicis. (6) Excubias agenti. (7) In agmine, in itinere, in stationibus. (8) Bis et vicies millies sestertium. (9) Publica expectatio. (10) Comitia imperii transigit.

3. Translate :—(B) chap. 50.

4. (*a*) Write short notes on the historical references of ext. (B). (*b*) "Duos omnium mortalium impudicitia, iguavia, luxuria, deterrimos :"—Is this characterisation too severe ?

5. (*a*) *Epistulas* :—Singular or plural in meaning, and why ? (*b*) *Urbanas cohortes* :—write an explanatory note on these. (*c*) Mediolanum ac Novariam et Eporediam et Vercellas ; Poenino itinere, Raeticis jugis ; Lugdunenses Viennensesque ; Treviri et Lingones; define the geographical position and give modern names. (*d*) "Poeninus :"—is this the correct orthography ? Give the derivation of the word, and point out its occurrence in Celtic names of mountains. (*e*) Distinguish between *Vienna* and *Vindobona*.

6. Translate the following extt., adding an explanatory note where you think proper :—

(1) Proximam quamque culpam antequam paeniteret ultum ibat. (2) Nemo enim adhuc cui imputaretur. (3) Unde plures erant, omnes fuere. (4) Neque modum oneris quisquam neque genus quaestus pensi habebat. (5) Sine more et ordine militiae, ut praetorianus aut legionarius insignibus suis distingueretur. (6) Utrisque frustra fuit, Vitellianis impune, per tantam hominum multitudinem mutua ignorantia fallentibus : Othoniani novitate vultus, omnibus in vicem gnaris, prodebantur.

7. Translate:—(C) Tacitus, Annals, Book I., chap. 72.

8. (*a*) *Triumphalia insignia*,—what were these? What were the conditions for receiving a *justus triumphus* in the time of the Republic? (*b*) *In acta sua jurari*,—explain. (*c*) *Legem majestatis*,—explain what offences it comprehended under (1) the Republic, (2) under Tiberius.

9. Translate:—

(D) Livy, Bk. XXII., Chap. 10, down to *sacrorum curantibus*.

10. Point out archaic forms in ext. (D), and give their later equivalents.

11. Translate:—

(E) Cicero, De Imp. Cn. Pomp., chap. XX:—"Etenim talis vir" to end.

12. (*a*) Narrate the date, object, and result of the delivery of this oration. By what other name is it designated? (*b*) How had the *Equites* come to occupy so important a position, politically and socially, as that they held in the time of Cicero? What was his policy in regard to them and why? (*c*) What class, or classes, in our modern, political and social life would you regard as their representatives?

B.A. EXAMINATIONS FOR HONOURS

VII. LATIN POETS.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate (adding an explanatory note where you may deem it necessary on any peculiar form or construction in any of the extt.):—

(A) Horace, Satires, Book I., Sat. vii., vss. 1-21.

2. (*a*) Explain what was the subject of this satire, and on what grounds a high place has been assigned to it by some. (*b*) Explain the meaning of the following:—(1) *Ut equis* praecurreret *albis*. (2) Omni *conventu*. (3) *Magna* compellans *voce cucullum*. (4) Serpens *Epidaurius*. (5) Cum *tristes* venere *Kalendae*. (6) *Altius* ac nos *praecinctis* unum. (7) Ad *unguem* factus homo. (8) *Parochi* quae debent ligna salemque.

3. (*a*) Compare the *Satires* with the *Epistles* of Horace, and show in what respects they differ from each other in point of literary style and subjects. (*b*) How do they stand related to each other in respect of dates of publication?

4. Translate:—

Juvenal (B) Sat. viii., vss. 254-268.

4. (*a*) Note the tense and mood of *laxabant*, *deceret*, *miraretur*, and explain the use of the Genitive in *legum* prima securis. (*b*) What variants occur in vss. 38, 42, 68, 155, 171?

5. Translate, with comments, the following extt. from Juvenal, Sat. XIII.:—

(*a*) Exemplo quodcunque malo committitur, ipsi
Displicet auctori. Prima est haec ultio, quod se
Judice nemo nocens absolvitur, improba quamvis
Gratia fallaci Praetoris vicerit urna.

(*b*) Pauper locupletem optare podagram
Nec dubitet Ladas, si non eget Anticyra nec
Archigene. Quid enim velocis gloria plantae
Praestat, et esuriens Pisaeae ramus olivae?

(*c*) Nos hominum Divumque fidem clamore ciemus,
Quanto Faesidium laudat vocalis agentem sportula.

(*d*) Et majore domus gemitu, majore tumultu
Planguntur nummi, quam funera. Nemo dolorem
Fingit in hoc casu, vestem diducere summam
Contentus, vexare oculos humore coacto.
Ploratur lacrimis amissa pecunia veris.

(*e*) Quantulacunque adeo est occasio, sufficit irae:
Chrysippus non dicet idem nec mite Thaletis
Ingenium dulcique senex vicinus Hymetto,
Qui partem acceptae saeva inter vincla cicutae
Accusatori nollet dare.

6. Translate:—

Persius, Sat. VI., vss. 40-60.

7. (*a*) Cite passages from Horace which Persius has imitated in these Satires. (*b*) Explain the meaning of:—(1) Tetrico pectine. (2) Veterum, primordia vocum. (3) Hibernat meum mare. (4) Coenare sine uncto. (5) Messe teorus propria vive. (6) Sapere nostrum hoc maris expers. (7) Lutea gausapa. (8) Exossatus ager.

8. Translate the following extt. from Sat. V., noting differences of interpretation in any:—

(*a*) Quumque iter ambiguum est, et vitæ nescius error
Diducit trepidas ramosa in compita mentes,
Me tibi supposui: teneros tu suscipis annos
Socratico, Cornute, sinu; tunc fallere sollers
Apposita intortos extendit regula mores,
Et premitur ratione animus vincique laborat,
Artificemque tuo ducit sub pollice vultum.

(*b*) Petite hinc juvenesque senesque
Finem animo certum serisque viatica canis!
"Cras hoc fiet." Idem cras fiet. "Quid? quasi magnum
Nempe, diem donas!" Sed quum lux altera venit,
Jam cras hesternum heu! consumsimus: ecce aliud cras
Egerit hos annos, et semper paulum erit ultra.

(*c*) Mendose colligis, inquit
Stoicus hic aurem mordaci lotus aceto;
Hoc, reliqua accipio, *licet ut volo vivere*, tolle.
"Vindicta postquam meus a prætore recessi,
Cur mihi non liceat jussit quodcunque voluntas,
Excepto si quid Masuri rubrica vetavit?"

(*d*) Mane piger stertis. Surge, inquit Avaritia; heia
Surge. Negas, instat, Surge, inquit. "Non queo." Surge.
"Et quid agam?" Rogitas? saperdas advehe Ponto,
Castoreum, stuppas, hebenum, thus, lubrica Coa;
Tolle recens primus piper ey sitiente camelo.

(*a*) Comment on the relative excellences, peculiarities of style, and mode of dealing with their subject-matter of Horace, Juvenal and Persius. Whom did each take as his model? (*b*) Write a note on the origin and development of Roman Satire, pointing out in what respects it differed from the satire of the Greeks.

B.A. EXAMINATIONS FOR HONOURS.

VIII. LATIN POETS.

TUESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate (adding an explanatory note where you may deem it necessary on any peculiar form or construction in any of the extt.):—
(A) Juvenal, Sat. X., vss. 54-77.

2. (*a*) Explain briefly the political references in ext. (A). (*b*) Explain also:—genua iucerare deorum. Cretatum bovem. Bene habet (turn into Greek). Diceret Augustum. Turba Remi nurtia. (*c*) Comment on the proper arrangement of the dialogue in ext. (A), and give your arrangement (*d*) Satire x has been regarded by some as inferior to Sat. viii.:—in what respects?

3. Translate:

(B) Plautus, Aulularia, Act. IV., sc. 6.

4. (*a*) Discrucior *animi; animo* male est; *cum animo* investigare:—Explain these usages, severally. (*b*) In vss. 1 and 10 of ext. (B), Wagner edits *Fide* instead of *Fidei*:—Can you cite any instances from Horace or Virgil of similar terminations in nouns of the 5th Decl.? (*c*) Explain the meaning of:—Vestitu et creta; sublevit os; foris crepuit; adii manum; sycophantias; laterna Punica; putatur ratio; Gallicis cantheriis; trifurcifer. (*d*) Explain the following forms: adaxit, scin, respexis, duit, quoi, med, tuaï, faxo, pote, fuat, temperi, injuriumst. (*e*) Write down the scale of the metre, and scan vs. 1-4 of ext. B)

(5) Translate :—

(C) Terence, Adelphi, Act iv., Sc. 7, vss. 28-44.

6. (*a*) Which is the correct form, Aedepol or Edepol? Also explain the forms :—*satur*, *sis*, *dis*, *quor*, *prorsus*. (*b*) Construe and explain the following formulæ :— (1) Ut te magnus perdat Juppiter. (2) Pro divom fidem. (3) Ita me di ament ut video tuam ineptiam. (4) O Juppiter, hancine vitam.

7. Point out the chief points of difference as regards style and originalty between Plautus and Terence.

B.A. IEXAMNATION FOR HONOURS.

IX. GREEK PROSE COMPOSITION.

TUESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, LL.D

Translate into Greek (accented) :—

(A) 1. Those who have sinned against the state will not come off with impunity. 2. They set a much higher value on freedom than on life. 3. The generals held a consultation to decide what they should do with the prisoners that had been taken in the battle. 4. So ambitious was he that he endured all hardships in order to succeed and win renown. 5. The magistrates were chosen for the purpose of drawing up laws. 6. Before it was known whether the soldiers would follow the king or not, the generals took their departure.

(B) Pandion had four sons, Ægeus, Nisus, Lykus, and Pallas, between whom were divided his dominions. Nisus received the territory of Megaris, which had been under the sway of Pandion, and there founded the seaport of Nisæa. Lykus was made king of the Eastern coast, but a dispute afterwards ensued, and he quitted the country altogether, to establish himself on the Southern coast of Asia Minor, among the Termilæ, to whom he gave the name of Lykians. Ægeus, as the oldest of the four, became king of Athens ; but Pallas received a portion both of the South-western coast and the interior, and he, as well as his children, appear as frequent enemies both to Ægeus and to Theseus. Pallas is the eponym of the deme Pallene, and the stories respecting him and his sons seem to be connected with old and standing feuds among the different demes of Attica, originally independent communities, These feuds penetrated into the legend. They explain the story which we find that Ægeus and Theseus were not genuine Erechtheids, the former being denominated a suppositious child to Pandion.

B. A. EXAMINATION FOR HONOURS.

X. LATIN PROSE COMPOSITION.

TUESDAY, APRIL 2ND:—AFTERNOON, 2 TO 5.

Examiner,..... REV. GEORGE CORNISH, LL.D.

Translate into Latin:—

(A) Now Gabii would not submit to Tarquinius, like the other cities of the Latins; so he made war against it; and the war was long, and Tarquinius knew not how to end it. So his son Sextus Tarquinius pretended that his father hated him, and fled to Gabii; and the people of Gabii believed him and trusted him, till at last he betrayed them into his father's power. A treaty was then made with them, and he gave them the right of becoming citizens of Rome, and the Romans had the right of becoming citizens of Gabii, and there was a firm league between the two people. Thus Tarquinius was a great and mighty king; but he grievously oppressed the poor, and he took away all the good laws of King Servius, and let the rich oppress the poor, as they had done before the days of Servius. He made the people labour at his great works; he made them build his temple, and dig and construct his drains; and he laid such burdens on them, that many slew themselves for very misery; for in the days of Tarquinius the tyrant, it was happier to die than to live.

(B) Scipio now arranged his maniples behind each other, so that long avenues were left between the columns from the van to the rear. The battle began, and the elephants, judiciously goaded by the Roman spears and sword-points, rushed down the open valleys and passed harmlessly out behind them. Then Massinissa had furnished Numidian cavalry to meet the horsemen of Hannibal; so that the long struggle between Rome and Carthage was at last to be decided by a fair fight between the infantry on either side. Down rushed the terrible shower of the Roman *pila*, transfixing Ligurian, Gaul and Moor in Hannibal's first line; then came the swift stroke of the Roman broadsword on the Carthaginians in the second line; and before long the spears of the *triarii* were dealing death among Hannibal's Italian veterans, whose countrymen of Bruttium would soon pay dearly for having submitted to the fascination of Hannibal's spells. Twenty thousand of the Carthaginians lay dead on the ground, 20,000 more were in Roman hands. The prayers of Scipio were answered, and the star of Melcarth had paled forever. Hannibal escaped; and thus entered Carthage for the first time since he was eight years old.

B. A. EXAMINATIONS FOR HONOURS.

XI. GENERAL PAPER.

THURSDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. (*a*) Define the term *Dialect*, and enumerate the Dialects of the Greek Language, and point out their leading characteristics and the districts where they severally prevailed. (*b*) To what causes may the origin of dialects be ascribed? (*c*) Give the futures, Attic and Ionic, of σημαίνω, καλέω, χαρίζομαι, σκεδάω, and μένω. (*d*) Account for the difference of the dialect in the chorus and dialogue of Greek Tragedy.

2. (*a*) Explain, giving examples, the terms *agglutinative*, *inflectional*, and *analytical*, as applied to languages. As languages grow in age and in use, in what direction is their tendency? Give illustrations. (*b*) Analyse the following words, naming each part:—δούρατος, μεμνήσθαι, ἐξεδεξάμην.

3. (*a*) Give the principal rules, with examples and exceptions, for the accentuation of the Greek verb. (*b*) Accentuate, with the proper *spiritus*, the following ext.:—

> Δρασω ταδ' · αλλα βαινε δωματων εσω,
> καὶ παισι πορσυν' οια χρη καθ' ημεραν.
> ω τεκνα, σφων μεν εστι δη ποπις
> και δωμ', εν ω λιποντες αθλίαν εμε
> οικησετ' αει μητρος εστερημενοι·

4. Write down the principal parts of the verbs εἰμί, εἶμι, ἴημι, and οἶδα.

5. Analyse the following forms:—βιηφι, ἔσχον, σύτο, ἔμολον, ruri, ru, re, sicubi, ibi, aurai, divôm.

6 Distinguish Epic, Lyric, and Dramatic Poetry, and name Greek examples of each.

7. Write a list of Latin words that differ in meaning according to difference in quantity.

8. Mommsen says: "Italy remained without national poetry, or art":—How far is this assertion too sweeping?

9. Mention the earliest Latin prose writers.

(*a*) Give some account of Ennius, and of his place as a Poet and Historian in Roman Literature. (*b*) In what departments of literature did Latin writers most closely follow the Greek models, and in what did they show the greatest originality?

B.A. EXAMINATION FOR HONOURS.

XII, HISTORY OF GREECE AND ROME.

THURSDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. The geography and climate of ancient Greece, and their influence on the national character.

2. The Greek and Roman systems of colonisation, and the relations of the colonies respectively to the parent state. Which system bore the greater resemblance to the English system?

3. (*a*) The political and social reforms of:—(1) Solon; (2) Cleisthenes; (3) Pericles, severally. (*b*) What were the general features of the foreign policy of Pericles. (*c*) What grounds are there for supposing that, had he lived, the result of the Peloponnesian war would have been different?

4. Explain in connection with the Athenian revenue system, the terms: *τέλος*, *εἰσφορά*, *ἐπίδοσις*, *τριηραρχία*.

5. What does Grote prove of the true character and object of *Ostracism?* Mention some of the principal occasions when it was resorted to?

6. To what family of the human race did the Persians belong? In what ways do you suppose the position and interests of civilized nations in Western Europe would have been affected if Persia had conquered Greece?

7. The consequences of the Expedition of Cyrus the Younger and of the conquests of Alexander the Great to the world.

8. The political and social objects of the Gracchi, and the causes of their failure.

9. (*a*) What were the great powers of the civilized world at the time of the Second Punic war? (*b*) What were the causes of the early successes and of the final failure of the Carthaginians in this war? (*c*) Comment on the statement that this war gave Rome the empire of the world.

10. Show how far the forms and institutions of the Republic were kept up under Augustus and his immediate successors.

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

EUCLID AND ARITHMETIC.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

Write the answers on two separate sets of papers headed A and B respectively to correspond to the questions.

A.

1. If the vertical angle of a triangle be bisected, the bisecting line will divide the base into segments having the same ratio as the conterminous sides.

a. The side B C of a triangle A B C is bisected at D, and the angles ADB, ADC, are bisected by the straight lines DE, DF, meeting AB, AC at E, F respectively; show that EF is parallel to BC.

2. In a circle the angle in a semi-circle is a right angle; the angle in a segment greater than a semi-circle is acute.

a. The circles described on the equal sides of an isosceles triangle as diameters will intersect at the middle point of the base.

3. Inscribe a regular pentagon in a given circle.

4. Find numerically the ratio between the diagonal and the side of a square to three places of decimals.

5. If 100 cubic inches of air weigh 31 grains, what will be the weight in grammes (a gramme = 15·43 grains) of a cubic metre of air, supposing the metre be equal to 39·37 inches.

6. Express 2 ft. $7\frac{1}{2}$ inches as the decimal of 100 yards.

B

7. Davide a straight line into two parts so that the rectrangle contained the whole line and one part may be equal to the square on the other part.

a. Find arithmetically the ratio of the greater segment to the whole line.

8. Triangles which have one angle of the one equal to one angle of the other, and the sides containing the equal angles proportional are similar.

9. Triangles which have one angle of the one equal to one angle of the other, and the sides containing the equal angles reciprocally proportional are equal.

10. A person spends 65 per cent. of his money in travelling, 10 per cent. of the remainder in books, and after giving away $\frac{3}{7}$ of this second remainder finds that he has $675 left; how much had he at first?

11. Three objects A B C are in a horizontal plane; A is 324 yds. 2 ft. 6 in. south of B, and 245 yds. 1 ft. 3 in. west of C; how far is B from C?

Vivâ-voce Examination also.

FIRST YEAR.

TRIGONOMETRY.—ALGEBRA.

WEDNESDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

Write the answers on two separate sets of papers headed A *and* B *respectively to correspond to the questions.*

A

1. Prove that the circular measure of any angle may be found by dividing the number of seconds in it by 206, 265, and show how this latter number is obtained.

2. Given tan A $= \frac{1}{2}$, findsin A, cos A, sec A.

3. The area of a triangle $= \sqrt{s\,(s-a)\,(s-b)\,(s-c)}$

4. Trace the changes of sign of tan A as A increases from 0 to 360°

5. Solve the equations :—

$$3x^2 - 1 = (3x + 2)\,(x - 5)\,;$$

$$\frac{x+1}{2} + \frac{x+2}{3} + \frac{x+3}{4} = 16\,;$$

$$\frac{3}{x} + \frac{4}{y} = 8, \quad \frac{5}{x} + \frac{6}{y} = 12\,;$$

$$\sqrt{x + 10} + \sqrt{x + 1} = 1.$$

6. Solve the quadratic $a\,x^2 + b\,x + c = 0$

7. A number of two digits is equal to seven times the sum of its digits show that one digit must be twice the other.

8. Prove that $a^0 - 1\ a^{-4} = \frac{1}{a^4}$

B

9. Compare the trigonometrical ratios of A, and 180° — A.

10. Show that

(*a*) $\tan^2 A + \cot^2 A = \sec^2 A + \operatorname{cosec}^2 A - 2$,

(*b*) $\tan (A + B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$,

(*c*) $\tan A + \tan B = \dfrac{\sin (A + B)}{\cos A \cos B}$,

(*d*) $\dfrac{\sin A + \sin B}{\cos A + \cos B} = \tan \dfrac{(A + B)}{2}$,

11. In any triangle

(*a*) $\cos \dfrac{A}{2} = \sqrt{\dfrac{s(s - a)}{bc}}$,

(*b*) $\cot \dfrac{A}{2} + \cot \dfrac{B}{2} + \cot \dfrac{C}{2} = \cot \dfrac{A}{2} \cot \dfrac{B}{2} \cot \dfrac{C}{2}$

12. Resolve into factors (*a*) $x^2 - x - 6$, (*b*) $3x^2 - 2x - 6$, (*c*) $24x^2 + 22x - 21$, (*d*) $x^4 - 5x^2 y^2 + 4y^4$, (*e*) $x^6 + y^6$.

13. Reduce to its lowest terms the fraction.

$$\frac{4x^3 - 10x^2 + 4x + 2}{3x^4 - 2x^3 - 3x + 2}$$

14. Show that $\sqrt{128} - 2\sqrt{50} + \sqrt{72} - \sqrt{18} = \sqrt{2}$, and that the continued product of $\sqrt{8}$, $\sqrt[3]{6}$, and $\sqrt[4]{54}$ is $12\sqrt[12]{6}$.

INTERMEDIATE EXAMINATION.

EUCLID—ARITHMETIC.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
A. H. WALTERS, B.A.

Write the answers on two separate sets of papers headed A and B respectively, to correspond to the questions.

A

1. Give Euclid's definition of the equality of the ratios of two pairs of magnitudes, and apply it to show that sectors of the *same* circle have the same ratio as the arcs on which they stand.

2. Find a fourth proportional to three given straight lines.

3. Prove that the tangent to a circle at any point is perpendicular to the radius passing through that point.

(*a*). In the diameter of a circle produced, find a point such that the tangent drawn from it to the circumference shall be of given length.

4. If the opposite angles of a quadrilateral be together equal to two right angles, it may be inscribed in a circle.

5. How many hours a day must 24 men work to accomplish as much in 5 days as 25 men could do in 4 days, working 6 hours a day.

6. If a metre be 39.371 inches, express 1000 metres as an decimal of a mile.

B

7. If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportionals, the triangles shall be equiangular to one another, and shall have those angles equal which are opposite to the homologous sides.

8. Inscribe a circle in a given triangle.

9. Similar segments of circles on equal straight lines are equal.

10. Tangents drawn from the same point to a circle are equal.

11. Find the vulgar fraction equivalent to the recurring decimal $.6\dot{3}$.

12. Find the amount of $2750 in $2\frac{1}{2}$ years at $4\frac{1}{2}$ per cent. per annum compound interest.

INTERMEDIATE EXAMINATION.

TRIGONOMETRY.—ALGEBRA.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
A. H. WALTERS, B.A.

Write the answers on separate sets of papers headed A *and* B *respectively to correspond to the questions.*

A

1. State and prove the rule for the division of numbers by logarithms.

a. Apply it to divide 4.356718 by .0012345.

2. Investigate a formula showing the amount at *compound* interest of a given sum at a given rate per cent. per annum in n years.

a. Apply it to ascertain in what time any sum will double itself at 5 per cent.

3. Calculate the height of a tower on the top of a hill from the following measurements taken at two stations in the same vertical plane with the tower. The angles of elevation of the top of the hill, and the top of the tower at the nearer station, are 40° and 51° ; at the farther station, which is in the same horizontal line with the other and at a distance of 240 feet, the angle of elevation of the top is 33° 45′.

4. Prove $\cos A = \cos^2 \frac{A}{2} - \sin^2 \frac{A}{2}$

$$\sin A + \sin B = 2 \sin \tfrac{1}{2}(A + B) \cos \tfrac{1}{2}(A - B).$$

5. Solve the equations :—

$$\frac{x}{x+1} + \frac{x+1}{x+2} + \frac{x+2}{x+3} = 3;$$

$$\frac{60 - x}{14} - \frac{3x - 5}{7} = 6 - \frac{24 - 3x}{4}$$

$$\frac{x}{2} + \frac{y}{3} = 1 \; ; \; \frac{x}{4} - \frac{2y}{3} = 3.$$

6. Find the greatest common measure of

$$x^3 + x^2 - 2 \text{ and } x^3 + x^2 - 3.$$

7. If $x + \sqrt{y} = a + \sqrt{b}$ prove $x = a$ and $y = b$

B.

8. In a right angled triangle, the hypotenuse being 645 feet and one of the sides 500 feet, find the angles in degrees, minutes and seconds, using logarithms.

9. Given $\sin A = \frac{2}{3}$, find $\tan A$.

10. Find the circular measure of 35°.

11. In a triangle when $b = 483.74$ yards, $c = 379.14$ yds., and B =34°, 11′, find C.

12. Solve the equations :—

$$(x - 1)(x - 2) = (x - 3)(x - 4);$$
$$(x - 1)(x - 2) = 20.$$

13. One man is 70 and another is 50 years of age; when was the first twice as old as the second ?

14. Simplify $\frac{x^2 - 1}{x^3 - 1}$, and $\frac{a - 3}{9 - a^2}$,

15. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$ prove $\frac{a + c + e}{b + d + f} = \frac{e}{f}$

THIRD YEAR.

MECHANICS—HYDROSTATICS.

WEDNESDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. What is the C.G.S. system of units in dynamics. Define *dyne, poundal, erg.*

(*a*) Calculate approximately the number of dynes in a poundal.

2. Investigate by Sir William Hamilton's Hodograph method the expression for the centrifugal force when a particle is moving uniformly in a circle.

(*a*) If a railway carriage weighing 10 tons move at the rate of 30 miles an hour round a part of a circle whose radius is 460 yards, calculate the centrifugal force on it in tons.

3. The velocity acquired by a body in running down a smooth inclined plane of a given height is always the same whatever the inclination of the plane.

4. Describe Smeaton's pulley, and find the ratio of the Power to the Resistance.

5. Find the ratio of the Power to the Resistance when a body is in equilibrium on the inclined plane and the power is parallel to the plane.

(*a*) If the force applied parallel to the plane be not sufficient to keep the body at rest, find the acceleration at the end of one second.

6. Find the common centre of gravity of three bodies, the centres of gravity of each of which are known.

7. Prove the following rule for finding the pressure on plane surfaces immersed in water:—For every 7 feet of depth allow 3 lbs. pressure per square inch, and to the result add one per cent.

8. Describe the construction of a mercurial barometer, and explain how it has been proved to measure the pressure of the air. Why is it that we speak of a pressure of 30 inches, without any reference to the bone of the tube.

9. If 100 cubic inches of dry air, at 60° Fah. and pressure 30 inches weigh 31.0117 grains, calculate the weight of air in a room 21 feet by 18 and 13 feet high when the barometer stands at 29½ inches, and the thermometer at 65° Fah.

10. Describe the method of finding specific gravities by the specific gravity bottle.

11. If W, V, P, T, be the weight, volume, pressure and absolute temperature of the air in a diving bell while at the surface; V' and T', the vol-

ume and absolute temperature when the difference of levels of water a he surface and in the bell after it has sunk is x feet, and w the weight of the air forced down, prove

$$1 + \frac{w}{W} = \frac{V'}{V}\ \frac{T}{T'}\ \left(1 + \frac{x}{P}\right)$$

12. In an air-pump prove that the elastic force of the air in the receiver after the n^{th} stroke is equal to

$$H \times \left(\frac{R}{R+P}\right)^n$$

where H = height of barometer; R = volume of receiver and leading-tube; and P = volume of pump.

a. If $R = 3\ P$, find the number of strokes necessary to make the mercury in the gauge rise to 25 inches when the barometer stands at 30.

THIRD YEAR.

OPTICS AND ASTRONOMY.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. A ray of light proceeding from any point Q, on the diameter of a concave spherical mirror meets the surface at O, and is reflected, and cuts the diameter again at a point q; prove that the distances $Q\ O$ and $q\ O$ are in the ratio of the distances of Q and q from the centre.

2. Prove Newton's theorem that the focal length of a spherical mirror is a mean proportional between the distances of two conjugate foci from the principal focus.

3. A bright coin one inch in diameter is sunk in water, so that its face is in a vertical plane and the lowest point is one foot below the surface of the water. Explain with the help of a diagram the change in the length of its vertical diameter, and calculate it, the index of refraction being $\frac{4}{3}$. Prove any formula you may employ.

4. Prove for a convex lens that $\frac{1}{d} - \frac{1}{D} = -\frac{1}{f}$

5. Define the centre of a lens and find it.

6. Find a formula for the magnifying power of a pocket lens.

7. State the principle of Foucault's pendulum experiment for exhibiting he rotation of the earth.

8. Explain the inequality in the lengths of day and night at Montreal throughout the year.

9. Make two rough sketches of the earth as seen from the sun at midday in London at the two solstices, and thence explain generally the causes of the seasons.

10. Why do we always see the same side of the moon. What is meant by libration in latitude, libration in longitude, and daily libration: how do these affect our knowledge of its surface?

11. Describe and explain the phases of the moon.

12. Mention the principal circumstances in which comets differ from the other heavenly odies.

B.A. ORDINARY EXAMINATION.

MECHANICS—HYDROSTATICS.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, LL D.
A. H. WALTERS, B.A.

1. If a pressure of 10 lbs. is applied continuously in a space where there is no other force acting to a mass whose weight on the earth's surface is 16 lbs., what velocity would this mass acquire at the end of 1 second. State the principles (and their proof) on which your solution depends.

2. If the above mass were close to the moon and pulled by its attraction, calculate the velocity it would acquire at the end of 1 second; assuming the mass of the earth to be 81 times that of the moon and the diameter of the moon to be 2,000 miles, the attraction varying directly as the mass and inversely as the square of the distance.

3. Prove that the part of the centrifugal force arising from the rotation of the earth, which is employed at any place in diminishing gravity, varies as the square of the cosine of the latitude.

4. What is the object of Atwood's Machine. Describe its principle, and find the velocity acquired at the end of one second by the weights.

(*a*) If the space described by either weight in one second be 1 foot, prove that the ratio of the weights must be $\frac{1}{17}$.

5. Apply the principle of "constancy of work done" to determine the ratio of the Power to the Resistance in the case of the inclined plane.

6. Find the resultant of two parallel forces acting in the same direction.

7. Prove that the ascensional force of a balloon (assumed to be perfectly spherical) is given by the following formula, where D = diameter in fathoms P = weight in lbs. of the silk and cordage per square yard, R weight in lbs. of the car, etc., assuming the weight of a cubic fathom of hydrogen

to be 1.141 lbs. and that of a cubic fathom of air to be 16.535 lbs., viz.,

Ascensional force $= \pi D^2 \{2.565. D - 36 P - R\}$

8. Show that the force which causes a liquid to descend from one vessel to another through the longer leg of a siphon is the weight of the column of liquid which lies between the two levels.

9. If a mass of cork placed in one scale of a balance be equilibrated by a brass weight in the other scale, when weighed in the usual manner, prove that if the scales and cork and brass be placed under the receiver of an air pump, and the air removed, there will no longer be equilibrium.

10. A mineral, whose weight is 311.91 grs., weighs in water 195.46 grs.; find its specific gravity.

11. If the elastic force of a mass of gas whose volume is 100 cubic inches be 30.275 inches of mercury. Calculate its elastic force if it be allowed to expand to a volume of 387 cubic inches, explaining the principles involved.

12. State and explain the principle of Archimedes concerning the force acting on bodies wholly or partially immersed in a liquid.

(*a*) If a cubical block of iron (sp. gr. = 7.25) be put in a vessel of mercury (sp. gr. = 13.596), find how much of it will float above the liquid.

B.A. ORDINARY EXAMINATION.

ASTRONOMY—OPTICS.

WEDNESDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Explain the method of finding the distance of Jupiter from the Sun.

2. Distinguish between the Periodic and Synodic Times of the Moon, and state how they may each be approximately ascertained without the use of instruments.

3. Explain what is meant by the precession of the equinoxes and its effect on the length of the year, showing the practical importance of the discovery by Hipparchus 125 B.C. Assuming the yearly motion to be 50″.2, find the change since his time in one of the numbers denoting the position of a star.

4. Describe the manner in which the Right Ascension of a star is found.

5. If the mean value of the *greatest elongation* of Venus be 45° 30′ and the distance of the Sun from the Earth be 92¼ millions of miles, find the distance of Venus from the Sun.

6. Show when an eclipse of the Sun will be partial, annular or total. Why can there never be an eclipse of the Sun at Easter, Easter-day being defined as the first Sunday after the full Moon which happens upon or next after the 21st of March.

7. Define 12 o'clock, and describe how it may be ascertained at a given place.

8. A ray of light is incident nearly perpendicularly on a thin prism of rock-salt ($\mu = 1.557$) of 2° angle. Find the dispersion of the ray, the dispersive power of rock salt being .053.

9. Find the curvature of a plano-convex lens of water of 4 inches focal length.

10. Find the deviation of a ray incident nearly perpendicularly on a prism of small angle.

11. Describe the Newtonian telescope and find its magnifying powers.

12. A short-sighted person can read a book with ease at the distance of $5\frac{1}{2}$ inches; he wishes to hold it at 10 inches from his eyes, determine the focal length of the spectacles he must use, and whether concave or convex.

B.A. AND THIRD YEAR.

ELECTRICITY, MAGNETISM, AND SOUND.

FRIDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define *dyne*, unit *magnet-pole*, unit *strength of current*, unit of *electromotive force*; *Ampére*, *Volt*, *Ohm*, stating the relations of the last three to the "absolute" units. What is the definition of the *legal Ohm?*

2. State Ohm's Law, explaining it with reference to the difference of potentials between any two points in the circuit, and stating the method of proving it. How may it be shown, that the E. M. F. of 10 voltaic cells is 10 times that of one cell?

3. Two wires whose resistances are 4 and 5 ohms respectively are placed in a circuit, so that the current divides, part passing through one, part through the other, calculate the resistance they then offer.

4. Calculate the horse-power expended in the electric lighting of a number of incandescent lamps, if the difference of potentials between the terminals of the dynamo be 125 volts and the current be 18 ampères.

5. A school-globe is encircled in the equatorial region by many turns of insulated copper wire through which a current is sent. State and explain, according to rule, in what direction, whether from east to west or vice-versâ, the current should circulate, in order that magnetic effects, similar to those of the earth, should be exhibited.

6. Describe the manner of decomposing water by a current, stating the poles at which the gases severally are found.

7. Describe the manner in which a needle may be magnetized by the discharge of a Leyden jar.

8. Name and define the *magnetic elements* at any point on the earth's surface.

9. Explain the action of the electrophorus.

10. State the rules for the construction of lightning conductors, explaining the reasons.

11. How may the velocity of sound in air be ascertained? State its amount, and the law of its variation with the temperature. State also the velocities in water and steel approximately.

12. Define *nodes* and *ventral segments*, and describe a mode of exhibiting them experimentally, in an open pipe.

13. What is the physical cause of the difference between different musical notes? How may this be proved?

FIRST YEAR HONOURS.

GEOMETRY.—(*Part I*).

THURSDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,.....ALEX. JOHNSON, LL.D

1. Given the rectangle under the sides of a triangle, the bisector of the base, and the difference of the base angles; construct the triangle.

2. Given the vertical angle of a triangle in magnitude and position, and the sum of the reciprocals of the sides; prove that the base always passes through a fixed point on the bisector of the vertical angle.

3. If circles be described passing through two given points and cutting a given circle, the chords of intersection will all pass through a fixed point on the straight line passing through the two given points, or will be parallel to this line.

4. Find the locus of a point such that the square of the perpendicular let fall from it on one side of a triangle shall be equal to the rectangle under the perpendiculars let fall from it on the sides.

5. A straight line is drawn from a given point to the circumference of a given circle, and divided so that the rectangle under the whole line, and its segment between the point of section and the given point is constant; find the locus of the point of section.

6. In any triangle the rectangle under the sides is equal to the rectangle under the perpendicular from the vertex on the base and the diameter of the circumscribed circle.

7. Through a given point without a circle, draw a secant so that the intercepted chord shall be of a given length, not greater than the diameter of the circle.

8. Divide a given straight line externally such that the difference of the squares of the parts shall be given.

9. Given the base and sum of squares of the sides of a triangle, find the locus of the vertex.

10. Draw a straight line from an angle of a triangle to the opposite side, cutting off from the triangle any given area.

FIRST YEAR HONOURS.

ALGEBRA.—(*Part I*).

THURSDAY, APRIL 16TH :—AFTERNOON, 2.30 to 4.30.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find the arithmetical, geometrical and harmonical means between 2 and $4\frac{1}{2}$.

2. The number of *variations* of n different things, taken r together is

$$n\,(n-1)\quad(n-2)\,\ldots\,(n-r+1)$$

3. Find the number of *permutations* of n letters, of which p are a's, q are b's, r are c's.

4. Four persons are chosen by lot out of ten: in how many ways can his be done? and how often would any one person be chosen?

5. Prove the Binominal Theorem for a positive integral index.

6. Expand $(1-x)^{-\frac{1}{2}}$ to six terms.

7. Express 1889 in the septenary scale.

8. Find the amount of a given sum in any given time at compound interest.

9. Solve the equation

$$\frac{a+x+\sqrt{2ax+x^2}}{a+x-\sqrt{2ax+x^2}} =$$

10. The fore-wheel of a coach makes 6 revolutions more than the hind-wheel in going 120 yards; but if the circumference of each wheel be increased 1 yard, the fore-wheel will make only 4 revolutions more than the hind-wheel in the same distance; find the circumference of each wheel.

FIRST YEAR HONOURS.

GEOMETRY (*Part II.*)

TUESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Any three straight lines drawn through the angles of a triangle, so as to intersect in the same point, whether *inside* or *outside* the triangle, divide the opposite sides into segments, such that the segments of any side are in a ratio compounded of the ratios of the segments of the other two sides. (Prove both cases.)

2. If two alternate legs of an harmonic pencil contain a right-angle, they bisect the angles contained by the other two legs.

3. If two triangles be co-polar, they shall also be co-axal.

4. If two circles cut one another orthogonally, any straight line drawn through the centre of either and meeting both circles is cut harmonically by the two circumferences.

5 Given three circles. Describe any circle, and form a triangle ABC with the three radical axes of this circle and each of the given circles. Describe any other circle, and similarly form a triangle A′ B′ C′. The straight lines joining corresponding vertices of these two triangles will meet in a point, and the points of intersection of the corresponding sides will lie on the same straight line.

6. Given four points A, B, A′ B′, in a straight line; find the locus of a point at which A B and A′ B′ shall subtend equal angles.

7. Describe a circle with respect to which a given triangle is self-conjugate.

8. The polar of a given point with respect to any circle of a co-axal system will always pass through a fixed point.

9. If through *any* fixed point a transversal be drawn cutting n given straight lines and circles, and a point be taken on it, such that the reciprocal of its distance from the fixed point is equal to the excess of the sum of the reciprocals of the intercepts between the given point, and the lines and circles on one side of it over the sum of the reciprocals of the intercepts on the other side of it; find the locus of the point of section.

10. *Reciprocate* the theorem that the three perpendiculars of a triangle meet in the same point.

11. If two circles touch three others, the contacts being of the same kind, the radical axis of the two is the external axis of similtude of the three.

12. A chord is drawn through a fixed point either inside or outside a circle, and tangents at its extremities; the locus of their intersection is the polar of the fixed point.

FIRST YEAR HONOURS.

THEORY OF EQUATIONS—ALGEBRA (*Part II.*)

THURSDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If in the polynomial

$$x^n + p\,x^{n-1} + qx^{n-2} + \&c.$$

v be the coefficient whose numerical value, irrespective of sign, is the greatest, prove that if $v + 1$ be substituted for x, the value of x^n will be greater than the sum of all the terms that follow.

2. Tabulate the function

$$10\,x^3 - 17\,x^2 + x + 6$$

for all the integral values of x from $+ 4$ to $- 4$, and then trace the curve it may be made to represent for these values.

3. Solve the equation $x^3 - 1 = 0$.

4. The equation $x^3 - 7\,x^2 + 15\,x - 9 = 0$ has two equal roots, find them.

5. Solve the reciprocal equation

$$x^4 - 2x^3 + 3\,x^2 - 2\,x + 1 = 0$$

6. State and prove Sturm's Theorem.

7. Find the number and position of the real roots of the equation

$$x^4 - 12\,x^3 + 13\,x^2 + 24\,x - 30 = 0$$

8. Calculate by Horner's method the root, lying between 2 and 3, of the equation

$$x^4 - 5\,x^3 + 3\,x^2 + 35\,x - 70 = 0$$

9. Given $y^3 - axy - b^3 = 0$, find, by the method of Indeterminate coefficients, y in a series of powers of x.

10. Expand a^x in a series of powers of x.

11. If 68 oxen in 8 days, or 38 oxen in 24 days could eat up the grass in a certain field, how many oxen could do the same in 30 days, *supposing the grass to grow uniformly.*

12. Resolve $\dfrac{1}{(x+a)\,(x+b)\,(x+c)}$ into its partial fractions.

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR.

ENGLISH LITERATURE.

FRIDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. State in what connection the following authors were mentioned:—Scott Fergusson, Thomas Rymer, Skene, Thomas Moore.

2. Give the main divisions of the period of Italian influence.

3. Give in general terms a sketch, consisting of two pages at most, of the leading features of Anglo-Saxon literature, and as you proceed mention writers or works that justify your statements.

4. Chaucer writes in the Prologue to the Canterbury Tales,

> He was a jangler, and a *golyardeys*

Explain the word in italics and give some account of the writer you mention in your explanation.

5. Give some account of the *Vision of Piers the Plowman* and of its author.

6. Write on Chaucer's Canterbury Tales in regard to (*a*) source, (*b*) originality in plan, (*c*) order.

7. Indicate the character of each of the following works, name its author and classify him; Handlyng Synne; Owl and Nightingale; Parlament of Fowles; Passetyme of Pleasure; Ecclesiastical History of England and Normandy.

8. Give some account of Lydgate, his works, and his influence on subsequent literature.

9. Distinguish between Miracle and Mystery Plays. Name three sets of English Mystery-plays, and give a general account of the way in which they were performed.

10. What do you know concerning the Paston Letters?

11. Explain the terms Morality, rime royal, bestiaries, scriptorium, alliteration.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE: ELIZABETHAN AND STUART PERIODS.

FRIDAY, APRIL 5TH:—MORNING 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

[Not more than eleven questions are to be answered.]

1. Notice the strength of Roman Catholicism in Europe at the commencement of the Elizabethan-Stuart period.

2. What is Sidney's theory concerning poetry *or* dramatic construction? Write on the Arcadia with reference to foreign influence, story, verse, and effect on subsequent literature.

3. Why did Spenser choose Arthur as the hero of the *Faerie Queene?* What does he say in regard to poetic order and in regard to the deeper purpose of his poem? Relate the adventures of the Red Cross Knight after Orgoglio is overthrown.

4. Give an account of William Drummond of Hawthornden and his work.

5. State Ascham's method of teaching Latin and indicate his place in our Literature. What are Milton's leading views concerning education, and where are they set forth?

6. What caused Milton to write *Areopagitica?* Whence is the title derived? Notice some of its leading arguments.

7. Give some account of Selden and of Earle.

8. Mention the chief amatory poets of the early Stuart period, and enter into detail concerning two of them.

9. Contrast Bacon with Montaigne. Glance at Bacon's place in philosophy and his *Instauratio Magna.*

10. Where does Plato touch on Atlantis, and in what way? Give a brief outline of Bacon's *New Atlantis,* and mention subsequent works with which it may be classed.

11. Give some account of the social condition of England as set forth in the first part of *Utopia,* and also the main features of the polity of Utopia.

12. Refer any six of the following quotations to their respective authors, and select (*a*) and (*j*) for further comment:

(*a*) I never saw nor knew in my conscience.
Any one woman out of patience.

(*b*) Sweet day, so cool, so calm, so bright.

(*c*) If Potentates reply.
Give Potentates the lie.

(*d*) Cherry ripe, ripe, ripe, I cry.

(*e*) My mind to me a kingdom is.

(*f*) My true love hath my heart.

(*g*) As good almost kill a man as kill a good book.

(*h*) I never heard the olde song of Percy and Duglas that I found not my heart mooved more then with a Trumpet.

(*i*) Stone walls do not a prison make.
Nor iron bars a cage.

(*j*) O eloquent just and mightie Death!

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

SPALDING :—*Elizabethan and Stuart Periods.*

FRIDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. "There never was, anywhere, any thing like the sixty or seventy years that elapsed from the middle of Elizabeth's reign to the Restoration." Justify this statement by referring to the literary productions of this period, particularly in the Drama, and in poetry.

2. What is meant by the statement that "modern symptoms" appear in the literature of the commonwealth ? Explain carefully, and verify your statements.

4. Give a brief account of Bacon's literary and philosophical work; assign dates to all that you can ; and explain the influence of his philosophical writing upon the world of thought.

4. Give the name of the author of each of the following, and make some comments on the scope and purpose of any two :—Arcadia, Poly-Olbion, Hudibras, The Compleat Angler, Annus Mirabilis, Worthies of England, Art of English Poesie, Tractate on Education.

5. Write short notes on each of the following writers: state the nature of his literary work, and give the name of any one of his best known productions : Hobbes, Quarles, Drummond, Clarendon, Herrick, Selden, L'Estrange Harrington.

6. Give, with dates, the names of three English dramatists before Shakspere, and three after, and also the title of one well known play of each.

7. Note the design and leading idea of the First book of Hooker's Ecclesiastical Polity, its style and literary merits.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE (*The Tempest.*)

FRIDAY, APRIL 5TH :—AFTERNOON, 2 TO 4.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Name, and describe *briefly*, the principal kinds of ecclesiastical drama produced in the middle ages ; and prove that it exerted some influence upon the writings of plays in Shakspere's time.

2. What is meant by the Dramatic Unities? State the position of Shakspere's plays with regard to the Unities.

3. Explain, in a general way, the phrase "Dramatic Construction;" and shew the strength and artistic merit of the construction of *The Tempest*.

4. Give the substance of a dialogue from, "Now, come my Ariel! bring a corollary" to "we must prepare to meet with Caliban" quoting from the text where you think it desirable.

5. State the leading features in the character of Antonio and of Caliban, supporting your statement by appeal to the text.

6. Write short explanatary notes upon;—*manacle* thy neck and feet together, our *hint* of woe, most *chirurgeouly*, *sensible* and *nimble* lungs, all *wound* with adders, cut his *wezand*, one *dowle* that's in my plum'e what belongs to a *frippery*.

7. Where do the extracts in question (6) respectively occur?

INTERMEDIATE EXAMINATION.

HISTORY OF ENGLAND.

FRIDAY, APRIL 5TH:—4 P. M.

Examiners,..... { CHAS. E. MOYSE, B.A. / P. T LAFLEUR, M.A.

(Not more than *six* questions are to be answered. Three are to be selected from Set A and three from Set B. Write the answers to A and B on separate bun lles of paper.)

A

1. Give, with dates, the leading events in the reign of Edward I.

2. Give some account of the Statutes of Kilkenny, Præmunire and Mortmain; the Treaties of Wedmore and Limerick; the Berlin Decree; Queen Anne's Bounty.

3. Mention noteworthy facts concerning Prynne, Argyll, Kirke's Lambs, Roger of Salisbury, Hugh le Despenser, Sir John Oldcastle.

4. Sketch the career of Marlborough *or* of the younger Pitt.

B

1. Sketch the leading events of the reign of Charles I, from the establishment of the Long Parliament to the battle of Marston Moor.

2. State very briefly in what connection each of the following occurs:

(*a*) "And shall Trelawney die?"

(*b*) "Change Kings with us and we will fight you again."

(*c*) "I come to lay my bones among you."

(*d*) "Pity that should be cut that has not committed treason."

(*e*) "We shall this day light such a candle in England as by the grace of God shall never be put out."

(*f*) "Afflavit deus et dissipati sunt,"

(*g*) "Privilege, privilege."

(*h*) "Peace, peace."

(*i*) "Now the Lord hath delivered them into my hand."

(*j*) "What shall we do with this bauble?"

(*k*) "Bring out yonr dead."

3. Give an account of the Anglo-French war in North America between 1754 and 1760.

4. In what way does the narrative of Victoria's reign touch on Lord Durham, the Chartists, the Anti-Corn-Law League, the Treaty of Paris, Todleben, the Alabama claims.

THIRD YEAR.

CHAUCER:—*Prologue to the Canterbury Tales.* RHETORIC.

FRIDAY APRIL 5TH:—2 TO 6 P.M.

Examiners,..... — ..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

(Write the answers to A and B on separate bundles of paper.)

A. 1. Quote from the *Prologue* three brief extracts which you think are good specimens of Chaucer's humour.

2. Write not more than a page on life in Chaucer's England as you see it reflected in the *Prologue*, and illustrate with precise references as you proceed.

3. Describe (*a*) the Marchaunt and the Maunciple, or (*b*) the Yeman and the Ploughman.

4. Scan, write in modern English, refer to their connections, and make notes on the portions in italics;

(*a*) And everych *hostiler* and tappe*stere*.

(*b*) But sore wepte sche if oon of *hem* were deed.

(*c*) In sangwin and in *pers* he clad was al.

(*d*) Him *thoughte* he rood al of the newe get.

(*e*) Whan Zephirus *eek* with *his* swete breethe
Enspired hath in every holte and heethe
The tendre *croppes*.

(*f*) But with these reliques whan that he fond

(*g*) Everych for the wisdom that he *can*

(*h*) A peire of *bedes gauded* al with grene

(*i*) And schort and *quyk* and ful of high *sentence*

(*j*) Ful many a fat partrich hadde he in *mewe*.
(*k*) Hire kever*chefs* ful fyne *weren* of grounde
(*l*) And peynede hire to countrefete *cheere*.
(*m*) For curs wol slee right as assoillyng saveth.
(*n*) As gret as it were for an ale-stake
(*o*) He was a wel good *wrighte*, a carpenter.
(*p*) And yet he hadde a thomb of gold pardé.
(*q*) *Algate* he wayted so in his achate.

5. Say in what connections the following allusions occur, and make notes on these in italics; the Bible; *seynt Jame;* seynt Peter; *seint Beneyt; seint Julian;* seynte Poules; *seint Thomas;* seynt Loy; Londone ale; Ypres; Plato; Chepe; King William; Epicurus; *Ypocras.*

6. Trace a few (say five) English words derived from the Low Latin, through the French, and explain changes of form. (Repetition of previous matter will not obtain credit).

7. Illustrate the instability of *r* from the *Prologue.* Write on the past participle of strong verbs, contracted comparatives, the genitive singular of nouns, indefinite pronouns, adverbs in *en* and *es*, and give examples taken from your reading.

B. 1. Explain: Degrading Metaphor, Tautology, Epigram, Synedoche, Barbarism. Give an example of each.

2. What is meant by Precision? Illustrate fully; shew the necessity of it in all prose writing, and give one or two examples of its neglect.

3. State what is meant by "Loose Sentence." Construct one, and give your reasons for judging that this form of sentence is, or is not, a desirable model to imitate.

4. Make some remark upon the principle which underlies the Ludicrous in composition; support your statement with illustrative example; and draw some distinction between Wit and Humour.

5. What is Objective Description? Cite some well-known example of its successful attainment, and give grounds for your selection.

6. Classify the Ends of Oratory.

7. Explain and illustrate the phrase, "Tragedy of Character."

8. What fundamental distinction exists between Lyric and Dramatic Poetry?

B.A. ORDINARY EXAMINATION.

MODERN HISTORY.

MYERS: *Mediæval and Modern History.* BRYCE: *Holy Roman Empire.*

FRIDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

[Students of Morrin College will answer any ten questions from groups B and C. Students of McGill College will answer group A, and not more than four questions, in all, from B and C, of which at least two must be chosen from C.]

A. 1. (*a*) The strange spectacle was then to be seen of an Emperor of the Romans, in whose eyes the speech of Ennius and Tacitus.....was simply the despised idiom.....of heretics and barbarians. Freeman: *Essays.* Comment on this statement, and write briefly on the Byzantine historians.

(*b*) Examine the relation in which Odovakar and Theodoric stood to the Empire of the East, with references to authorities.

2. (*a*) Mention the Prefectures. Notice their geographical limits, and add a suggestive note or two.

(*b*) Indicate the parallelism between the civil and military power in the Prefectures. What had been the previous condition of things, and who made the change?

3. Write on the Moslem desire for unity as seen in the history of the Undivided Caliphate; (*b*) the method of choosing a Caliph and his successor; (*c*) internal and external causes of the decay of the Caliphate of the East. (*d*) the Assassins.

4. (*a*) Give proof of the debasement of the Merovingian kings, and mention salient points in Eginhard's description of the habits and accomplishments of Karl the Great.

(*b*) What division of his kingdom did Karl the Great make before his death, and what general principle is visible in it?

5. (*a*) Briefly contrast the territorial development of Aragon, Russia and Portugal.

(*b*) Show by means of rough maps or of description, the leading changes in the development of Western Francia as seen in 500, 1000, 1360, 1500.

6. Make notes on Nikaia, Trebizond, Constantine Palaiologos, Sarai, Stephen Dushan, Gregory of Tours, the Sicilian Vespers, Dexippus, Jornandes, the Theologian Emperors.

B 1. Mention the Crusades in which monarchs took part and the monarchs who took part in them. State as precisely but as briefly as you can how each ended. What evil results came from the Crusades?

2. Give an account of the migration and the settlement of the Ostrogoths.

3. Sketch the history of Genoa *or* of the Hanseatic League.

4. What were the main objects of the reforms of Hildebrand?

5. Make brief notes on Angora, Stamford Bridge, the Eddas, the Hegira, the Synod of Whitby, the Ten Circles, Towton, the Treaty of Verdun, the Union of Calmar, the Treaty of Westphalia.

6. Give some account of the Spanish Conquest of Mexico.

C 1. State the different theories that prevailed concerning the coronation of Karl the Great. Which prevailed?

2. Write on the admission of Barbarians to Roman titles and honours.

3. What motive led Constantine to make Christianity the Imperial religion? Why was the union of Church and State imperfect, and which was the character of the Imperial machinery?

4. Unfold the relation existing between the Byzantine Emperors and the Holy Roman Empire.

5. Show how the "necessity and divine right of the Empire" was "proved out of the Bible," *or* how that doctrine was illustrated in Mediæval Art.

6. Describe the entrance of a Teutonic Emperor into Rome. "The Teutonic Emperors from Charles the Great to Charles the Fifth have left fewer marks of their presence in Rome than Titus or Hadrian alone have done." Explain why, and give evidence in proof of the foregoing quotation.

THIRD YEAR HONOURS.

Milton, *Shorter English Poems;* Wordsworth, *Prelude.*

THURSDAY, APRIL 26TH, AFTERNOON, 2.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Compare any one of the divisions of L'Allegro, except the first and the last, with the corresponding division of Il Penseroso.

2. Mention classical allusions in Il Penseroso, and explain them.

3. Write a short essay on Arcades, with especial reference to its form, construction, and quality.

4. Why was Lycidas written? Explain the construction of the poem and justify it? How is Lycidas criticized by Dr. Johnson?

5. (*a*) Quote the passage beginning, Fame is the spur.

(*b*) Select from Lycidas a few words which seem obscure; explain them, and say in what connection each occurs.

6. Touch on the causes and the course of the French Revolution. Notice views regarding it, which are expressed in the Prelude, using Wordsworth's language when it rises above the ordinary level of the poem.

7. Indicate the relation of the Prelude to the work of which it forms a part.

8. Give Wordsworth's description of

(*a*) University life in the old time.

(*b*) His abiding-place at St. John's College.

(*c*) Sadler's Wells,

And his opinions regarding

(*d*) Coleridge.

(*e*) Burke.

9. Trace the development of the poet's mind, by selecting cardinal beliefs reflected in the Prelude.

10. Write on one of these.

11. (*a*) In what way does Dryden refer to Spenser, Fairfax and Waller?

(*b*) To Milbourn and Blackmore?

(*c*) What points in Chaucer does Dryden think excellent?

THIRD YEAR HONOURS.

(ADDISON: *Essays in the Spectator.*)

LESLIE STEPHEN:—*English Thought in the Eighteenth Century.*

TUESDAY, APRIL 23RD:—9 TO 12 A.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / T. LAFLEUR, M.A.

1. What general parallel does the Spectator draw between Homer, Virgil and Milton?

2. In what is Milton's "chief excellence" said to lie?

3. Give the substance of the remarks on the language suitable to epic poetry,

4. Make some notes on the principal objections raised against, (*a*) the structure of *Paradise Lost*, (*b*) the sentiments expressed in the poem.

5. What is the Spectator's judgment upon the power of description shewn by Milton?

6. In what respects are the pleasures of the Imagination said to be preferable to those of the Understanding?

7. How is the Imagination affected by Similitudes?

8. State and support your own opinion as to the critical value of these essays from the Spectator.

9. Give the substance of Rousseau's political theory, and shew where its weakness lies.

10. "The first Whig was the devil." Whose opinion was this? Was it characteristic of the man? Prove fully the truth of your answer.

11. What were Burke's reasons for hating metaphysics?

12. Write a short account of the utilitarianism of Priestley.

13. State the name of the author, and give an outline of any two, of the following: Political Justice, Rights of Man, Estimate of the Manners and Principles of the Times, Esprit des Lois, Treatise concerning Civil Government.

THIRD YEAR HONOURS.

Chaucer, *Parlament of Foules*; Sidney, *Apologie for Poetrie*; Milton, *Areopagitica*.

FRIDAY, APRIL 19TH:—MORNING, 9.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Give the substance of

(*a*) Chaucer's outline of the Dream of Scipio or his description of the Temple.

(*b*) The opinions of the speakers for the various species of birds.

2. Make notes on Athalant, Tisbe, Alain, Macrobie, Semyramus.

3. Mention a passage in Chaucer's poem to which Spenser was indebted.

4. Write in modern English;—Well y-bourded, unnethes it might be lesse; the little leaser; leisir and conning; the day gan misse; the cocke that horologe is of thorpes lite; I chose and chese; and to my bed I gan me for to dresse; in armes hath y-nome; the dredeful roe.

5. Contrast the speeches of Milton and Isocrates. What reference does Milton make to Isocrates?

6. Trace Milton's sketch of the history of licensing.

7. How might licensing affect a parochial minister ?

8. How does Milton use the following in the argument of Areopagitica

(*a*) Arise Peter, kill and eat.

(*b*) The cave of Mammon.

9. Give the meanings of words and phrases, and explain allusions; elenches; subdichotomies; dividuall movable; ballatry and gammuth; those planets that are oft combust; his marginall Keri; the tunaging and poundaging of—truth; enchiridion; ferular; Atlantick and Eutopian polities; a Grammar lad; such as Adam as he is in the motions; Sorbonists.

10. In what way does Milton refer to Selden, Galileo, Spenser, and Lord Brook, and in what connections ?

11. A man might spend his time better than in reading poetry. How does Sidney meet such an argument ?

12. How does Sidney show that poetry is not the mother of lies ?

13. "Therefore compare we the Poet with the Historian and with the Morrall Phylosopher." Unfold the comparison.

14. When speaking of English Literature, how does Sidney touch on (*a*) Tragi-Comedy, (*b*) Songs and Sonnets ?

THIRD YEAR HONOURS.

Sweet, *Anglo-Saxon Reader;* Macaulay, *Hist. of England, Vol.* 1, *chap. I.*

WEDNESDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

(A). 1. Translate XX. 134-144. 300-312.

2. Make notes on næssas (108), sellice (176), brond (204), blacne (267) missere (248).

3. Translate XIX, I; XXII, 93-101; 158-163; XXIII, 122-132; 246-260; XXVI, 1-11; XXVII-VI.

(B). 1. "In the year 1603 the great Queen died. It was then that both Scotland and Ireland became parts of the same empire with England." Write the substance of Macaulay's sketch of the previous history of Ireland and Scotland and of the contrasts they exhibited.

2. Give an account of the character of the Cavaliers and Puritans, and notice the arguments which either of those parties might have used to justify its appeal to arms.

THIRD YEAR HONOURS.

Hallam, *Middle Ages, Chaps. I., III., V.*

FRIDAY, APRIL 12TH:—MORNING, 9.

Examiner,..... CHAS. E. MOYSE, B.A.

1. (*a*) Give some account of the war of Charlemagne against the Saxons.

(*b*) "Each frontier of the empire" (after the death of Charlemagne) "had to dread the attack of an enemy." Name the enemies and the frontiers they threatened.

(*c*) "In the dark ages of European history the reign of Charlemagne affords a solitary resting place between two long periods of turbulence and ignominy." Briefly explain.

2. To what causes does William of Tyre ascribe the decline of the Christian establishment in the East? What is Hallam's view? Describe the crusades of St. Louis.

3. Notice (*a*) evidence that shows the existence of the principle that women should not succeed to the crown of France; (*b*) the claims of Edward III. to that crown. What does the term Salic mean, and what do you know of the nature of the law itself?

4. Examine the sovereign power of the early Capetians.

5. Give an account of Norman settlement in the south of Europe.

6. Sketch the career of Walter de Brienne and of Sir John Hawkwood

7. Make notes on John of Procida, the Armagnacs, Roger di Loria, the Aulic Council, Alessandria, the Spanish March, the Exarchate of Ravenna, the overthrow of the Ostrogoths, Henry Dandolo, the law of *divieto*, the Catapan.

8. Give proofs of the absolutism of Henry III. of Germany.

9. Examine (*a*) the power of the doge of Venice and the manner of his election. "Once only a doge of Venice was tempted to betray the freedom of the republic," who was he, and what was his end? (*b*) the Venetian Council of Ten.

10. Sketch the history of Genoa previous to the great struggle with Venice.

11. Examine the principle of election to the Imperial throne previous to the Golden Bull. What was the nature of the Golden Bull?

12. "A lively and ambitious people fell upon the singular idea of admitting all citizens to offices of magistracy by rotation." Enter into detail.

THIRD YEAR HONOURS.

THURSDAY, APRIL 11TH:—MORNING, 9 TO 12.

MACAULAY: *Essays on Clive, Hastings, and Von Ranke.* BURKE:—*Reflections.*

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. State in outline the facts and comments given by Burke concerning the sermon of Doctor Richard Price.

2. "The position taken by Burke was virtually an anachronism." Justify or refute this statement, as you may think fit.

3. What reasons are given for the judgment that "a perfect democracy is the most shameless thing in the world."

4. What are Burke's principles in regard to confiscation of property by revolutionary powers.

5. Make short notes upon, Hanse-towns, Palais Royal, National Assembly, de Calonne, assignats.

6. Write a short criticism of Macaulay's literary style as shewn in the essays selected.

7. Who were the Moguls, the Mahrattas, Surajah Dowlah, Mier Jaffier?

8 What points in the administration of Clive are selected by Macaulay for severe condemnation?

9. Macaulay declares that "Natural Theology is not a progressive science." What are his reasons?

10. Reproduce the account of Loyola and his work.

11. Give in outline the plan of construction of the East India Company.

12. State Macaulay's opinion with regard to the authorship of the Letters of Junius, and his grounds for maintaining it.

THIRD YEAR HONOURS

Spenser, *Faerie Queene*, Bk. I.; Milton, *Comus*; Dryden *Annus Mirabilis*, *Absalom and Achitophel* Part I.

SATURDAY, APRIL 6TH:—MORNING, 9 A.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. What is said in Spenser's prefatory Letter concerning

(*a*) His choice of Arthur, Arthur's Life, and the signification of Arthur.

(*b*) Occurrences on the second and third days of the Feast.

2. Give the meaning (and nothing else) of the following words and phrases: a table plaine; pardale; graile; *intended* sting; *practicke* paine; lay-stall; *enfouldred* smoke; sam; miscreant; *canon* bit; defeasaunce; *kindly* skill (of the earth); what *mister* wight; ghastly drere; boystrous club; combrous gnattes; faytor; fere; to quaile; discolourd say; to stye; hellish sinke; pounces; dolefull disaventurous deare; disarmed, *dissolute*, dismaid; the sleepers sent.

3. Describe Gluttony and Arthur.

4. Write on Spenser's indebtedness to Classical and Romance literature.

5. (*a*) contrast *Comus* with the *Old Wives Tale*.

(*b*) Give an outline of the arguments used by the Lady and Comus, and point out the allegory in Comus.

6. (*a*) With what subjects does *Annus Mirabilis* deal? How does Dryden speak of the measure in which it is written? Was the measure new to our literature?

(*b*) Notice Dryden's Euphuism and his use of figures taken from the animal world.

7. (*a*) Indicate the political bearing of Absalom and Achitophel.

(*b*) Describe Corah, and give an outline of David's speech.

8. Write on Dryden as a satirist with reference to *Absalom and Achitophel*.

THIRD YEAR HONOURS.

ANGLO-SAXON AND EARLY ENGLISH.

WEDNESDAY, APRIL 3RD:—MORNING, 9.

Sweet: *Anglo-Saxon Reader* extt. IV., VIII., XXI.; Morris and Skeat: *Specimens, Part II.* extt. I.-IX.

Examiner,.....CHAS. E. MORSE, B.A.

(A).

1. State briefly the aim of Orosius and why Alfred added the voyages of Ohthere and Wulfstan.

2. Translate II., 46-62.

3. Examine the construction of spédig, æghwilc, thagyt, næfde. Parse unbebohtra, the (46) foth, horsan, hyde (56) berenne (60).

4. Make notes on the words déor, hranas, ar, kyrtel, æt Hæthum (99) hwæther, butan, thæt wæron eall Finnas.

5. Translate thara hé sæde thæt hé syxa sum of sloge syxtig. (*b*) Eall thæt his man ather oththe ettan oththe erian mæg (*c*) iglanda fela (*d*) Thonne cymeth Ilfing éastan in Estmere of thæm mere, the Truso standeth

in stæthe. (*e*) And thy thær licgath tha déadan menn swa lange and ne fuliath, thæt hy wyrcath thone cyle him on.

(B). Translate 894, on thys géare.....setum faran woldon.

(C). Translate 49-55; 103-107; 173-180; 312-319.

2. Make notes on béagas, ricost (36) hremmas (106) daroth (149).

3. Conjugate in full windan and céosan. Decline halig, scip, fot, duru and thes.

4. Explain the following terms: gemination, nasalization, breaking. What is the effect of *umlaut?* Give the changes due to i-umlaut.

(D) Translate I. ll. 76-88. II. Ps. xvii. ll. 99-116, IV. (C) ll. 13-36. VI. stanzas 8, 13 and 21. VII. ll. 250-272. IX. ll. 1-13.

B.A. HONOURS.

Gibbon, *Decline and Fall*, Chaps. L., LI., LXIV., LXV.; Freeman, *Growth of the English Constitution*.

TUESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Unfold the "duties" of Islam.

2. Answer, from Gibbon, any *one* of the following:

(*a*) Arab independence *or* Arab hospitality.

(*b*) The source of the Koran, and its compilation.

(*c*) The distinction between Shiites and Sonnites.

3. Write on the following subjects:

(*a*) The wars of the Koreish.

(*b*) The siege of Damascus (633).

(*c*) The conquests of the Moguls in Europe.

(*d*) The struggle between Timour and Bajazet.

(*e*) Earl Simon.

(*f*) What was really implied in the method of electing kings, with illustrations from English History.

B.A. HONOURS.

GUIZOT :—*History of Civilization in Europe.*

MACAULAY :—*History of England*, Vol. I., Chap. III.

1. From what two points of view may the history of civilisation be studied?

2. Explain, in general outline, the effects of the barbarian invasions upon Europe.

3. For what reasons was the development of the feudal system a slow one?

4. State Guizot's views with regard to the connection between the power of the church and the power of the temporal rulers in the middle ages.

5. What is the distinctive and fundamental character of European civilisation, and at what time does this begin to appear?

6. Shew that royal power plays an important part in European history, and make clear the two-fold aspect under which it should be discussed.

7. Make some comment upon:—Religion as a principle of association, States-General, Abailard, Hanseatic league, Revocation of the Edict of Nantes.

8. What analogy is drawn between religious and civil revolutions?

9. Give a general idea, with corrobative facts, of the state of the navy in the time of Charles the Second.

10. What does Macaulay state with regard to the mineral wealth of England during that period.

11. Comment upon:—the country gentleman, the two sections of the clergy, watering places, the fashionable part of the capital, the coffee-houses, inns.

12. Give some idea of the state of the fine arts, especially painting and architecture.

EXAMINATION FOR THE NEW SHAKSPERE SOCIETY'S PRIZE.

KING LEAR.

1. Notice the previous history of the story of King Lear in our Literature. Write on the date of Shakspere's play.

2. Compare Lear with the other tragedies in regard to (*a*) scope, (*b*) passion and suffering.

3. Give your opinions of the character of Cordelia, and quote as you proceed, but do not insert your quotations in your text.

4. Give the substance of what passes between Lear, Cordelia, and Kent in Act 1, Scene 1.

5. Quote expressions in King Lear which have become proverbial, and say in what connection each occurs. Explain a few of the more obscure allusions in the play.

6. Quote three disconnected passages which you think especially fine but limit each to ten lines.

HAMLET.

1. What do you know regarding the various editions of Hamlet? From what sources did Shakspere derive material?

2. How does Ophelia describe the madness of Hamlet?

3. Give the substance of Polonius' advice to Laertes.

4. Beyond every character that Shakspere has drawn (Hamlet alone excepted) that of Ophelia makes us forget the poet in his own creation. The effect is produced by means so simple, by strokes so few and so unobtrusive, that we take no thought of them—it is the supreme and consummate triumph of art." Write on this theme and quote as you proceed, but do not insert your quotations in your text.

5. Notice adverse criticisms of leading features of the play, state their source when you can, and indicate how you would deal with them.

6. Make notes on the following, and say in what connection each occurs; unhousel'd, disappointed, unanealed; whose lungs are tickle o' the sere; little eyases; I know a hawk from a handsaw; peak, like John-a-dreams Marry, this is miching mallecho, it means mischief; their even Christian; eisel; it out-herods Herod; it head; loggats; sliver.

EXAMINATION FOR NEW SHAKESPERE SOCIETY'S PRIZE.

OTHELLO AND MACBETH.

1. "In the tragedy of *Othello* a simple passionate nature and a soul stained with crime have been sufficient to ruin everything." Comment fully upon this criticism, and give your own view of the dramatic inspiration of the play.

2. Assign, as nearly as you can, a date to *Othello*, and give your reasons for so doing. State also the principal sources from which Shakspere derived his facts for its composition.

3. Relate in outline the events contained in Act V.

4. Explain:—Sagittary, men whose heads do grow beneath their shoulders, one that excels the quirks of blazoning pens, to such exsufflicate and blown surmises, the ice-brook's temper.

5. Distinguish, in a general way, between the historical facts in the story of Macbeth and those introduced, for dramatic purposes, by Shakspere?

6. Is there any likelihood that other hands than Shakspere's had a share in the writing of *Macbeth?*

7. Make some comment on the *un*human characters in the play, and point out the dramatic value of their rôle.

8. Whom do you consider to be the principal character in this drama? Give reasons for your opinion.

9. Assign the following to their places, and make short notes on important words:—

a. .....The grief that does not speak
Whispers the o'erfraught heart and bids it break.
b. They met me in the days of success
c. .....If the assassination
Could trammel up the consequence.
d. Sleep that knits up the ravell'd slave of care.
e. The shard-bone beetle with his drowsy hums
Hath rung night's awning peal.
f. Augures and understood relations have
By maggot-pies and choughs and rooks brought forth
The secret'st man of blood.

LOGIC, MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

LOGIC.

TUESDAY, 16TH APRIL:—MORNING, 9 to 12.

Examiners,..... { J. CLARK MURRAY, LL.D.
P. T. LAFLEUR, M. A.

1. Define carefully and illustrate:—Names, Abstract Names, Relative Name, Privative Name, Dilemmatic Proposition.

2. What are the principal causes of ambiguity in names?

3. Explain Extension and Intension as applied to names.

4. What is the object of logical conversion? Convert the following propositions, and state clearly the reasons for your method.

To bear is to conquer fate
Not one of the Greeks at Thermopylae escaped.
All the rest is leather and prunella.
All sentences are not propositions.
Some animals have no power of locomotion.

5. Distinguish between Contrary and Contradictory Opposition, and give reasons for considering the latter as the more complete opposition of the two.

6. If the proposition "No man is infallible" is true; state the propositions that can be inferred from it, (1) as true, (2) as false, and (3) as doubtful or unknown.

7. Write out and prove the soundness of any two General Canons of the Syllogism.

8. Write the "Dictum de omni et nullo" in any one of its forms, and shew that it applies for purposes of inference to any one of the moods in the first figure.

9. Explain and illustrate the Fallacy of Figure of Speech, and that of "Non causa pro causâ" in any one of its forms.

10. Test *formally* the following cases of reasoning:—

(*a*) All feathered animals are birds; bats are not birds; therefore, bats are not feathered animals.

(*b*) Whenever a body is heated, its volume increases, because its molecules are driven apart.

(*c*) Some things which have a practical worth are also of theoretical value, for every science has a theoretical as well as a practical value.

(*d*) Theft is a crime; theft was encouraged by the laws of Sparta; therefore, the laws of Sparta encouraged crime.

(*e*) If the prisoner is found guilty by the jury, he will be imprisoned; now he is imprisoned; therefore, he has been found guilty.

THIRD YEAR.

MENTAL PHILOSOPHY.

MURRAY'S HANDBOOK OF PSYCHOLOGY, BOOK II., PART I.

THURSDAY, 11TH APRIL:—MORNING, 9 to 12.

Examiner,..... .....J. CLARK MURRAY, LL.D.

1. Take any simple Perception, and explain the process by which it is formed; *or* discuss the question, whether Taste or Smell stands the higher in intellectual rank.

2. Write a brief note on any of the perceptions of Touch *or* of Hearing.

3. State the evidence which proves that we cannot perceive depth in space by sight alone.

4. Explain fully the illusion of the stereoscope, *or* the magnification of objects seen through a fog.

5. Discuss the question of the *Primum Cognitum*, *or* the controversy between Nominalists and Conceptualists.

6. Distinguish the three factors of the reasoning process, *or* the different points of view from which the process is regarded by the Logician and the Psychologist respectively.

7. Explain the Religious Ideal in its relation to the other forms of Idealization.

8. Defined Hallucination, and describe its sources.

9. Distinguish Empiricism and Transcendentalism.

10. State and criticise the Empirical theory of Self-consciousness *or* of the idea of Time.

B.A. ORDINARY EXAMINATION.

CALDERWOOD'S HANDBOOK OF MORAL PHILOSOPHY.

WEDNESDAY, 3RD APRIL:—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

(*Answer any ten questions, and only ten*).

1. Describe the province of Moral Philosophy, and its divisions.

2. Define moral action.

3. Explain the relation of moral judgments to the first principles of morals.

4. Discuss the question, whether conscience can be educated.

5. Distinguish the judgment of Oughtness from the judgment of Rightness.

6. Explain the threefold use of the distinction between Perfect and Imperfect Obligation.

7. (*a*) Explain the relation of Rights and Duties. (*b*) What is the inalienable right of man?

8. Give a connected account of the Utilitarian Theory of Morals.

9. Give an outline of the arguments against Utilitarianism.

10. State Bain's theory of conscience.

11. Give a criticism of Bain's theory.

12. State the Libertarian and Necessitarian theories on the Freedom of the Will.

13. Give Calderwood's classification of Impulses to Action.

14. State the moral arguments for the Immortality of the Soul.

15. Define Theism, Pantheism, Materialism.

16. Explain the Argument from Design, and its bearing on the question of the Being of God.

B.A. ORDINARY EXAMINATION.

ROGERS' MANUAL OF POLITICAL ECONOMY.

WEDNESDAY, 3RD APRIL:—AFTERNOON, 2 TO 5.

Examiner, ...J. CLARK MURRAY, LL.D.

1. Define Wealth, Value, Price.

2. State (*a*) the advantages and the disadvantages connected with the Division of Labour, (*b*) the limit to which this division can be economically extended.

3. Define Capital, Interest, Profit, Discount.

4. State the causes which produce different rates of wages; *or* describe the schemes proposed for improving the remuneration of the working classes.

5. Explain the nature of Rent.

6. Describe various tenancies of agricultural land; *or* explain the causes and proposed remedy for Irish agricultural distress.

7. Explain the meaning of the terms, Demand and Supply.

8. Write a note on any of the following subjects:—the Function of Money, the Inconveniences of a Double Currency, the Effects of an Inconvertible Currency.

9. State *either* (*a*) the causes which give rise to Foreign Trade, *or* (*b*) those which determine the price of foreign products.

10. State Adam Smith's four rules for taxation; *or* discuss the comparative advantages of the two systems of taxation.

THIRD YEAR HONOURS.

TUESDAY, 9TH APRIL:—MORNING, 9 TO 12.

Examiner,..... .... J. CLARK MURRAY, LL.D.

I. *Greek Philosophy.*

1. Give a brief account *either* of the Ionic *or* of the Eleatic School.

2. Sketch the philosophy of one of the following:—Heraclitus, Democritus, Anaxagoras.

3. Give a brief account of one of the schools of Incomplete Socratics.

4. Give an outline of one of the following systems of Ethics:—the Platonic, the Aristotelian, the Stoical, the Epicurean

II. *Murray's Handbook of Psychology.*

Book II., Parts 2 and 3.

1. Explain the general theory of Pleasure and Pain; *or* explain why some feelings, that seem naturally pleasant, sometimes give pain, while others, that seem naturally painful, sometimes give pleasure.

2. Analyse the Feelings for Self, *or* explain the origin of Sympathy and Antipathy.

3. Write a note on the Intellectual Feelings *or* on the Feelings of Action.

4. Explain the property on which the Motive Power of Feelings depends *or* discuss the Freedom of Volition.

THIRD YEAR HONOURS.

THOMSON'S OUTLINE OF THE LAW OF THOUGHT, AND MILL'S LOGIC, BOOKS IV. AND V.

SATURDAY, APRIL 20TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Distinguish Pure and Applied Logic.

2. Illustrate by an example the different powers of conception.

3. State the common doctrine of Logicians in regard to the Relation, Quantity, Quality and Modality of Judgments.

4. Distinguish Explicative and Ampliative Judgments, giving an example of each; *or* illustrate by examples Thomson's Table of Judgments.

5. Distinguish Mediate and Immediate Inference, giving an example of each.

6. Explain Thomson's doctrine of the Opposition of Propositions, *or* give the Canons of the several Figures of the Syllogism.

7. Write a short essay *either* on the Requisites of a Philosophical Language, *or* on Mill's Classification of the Fallacies.

THIRD YEAR HONOURS.

WEDNESDAY, 24TH APRIL:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

I. *Fraser's Extracts from Berkeley.*

1. State in outline the fundamental doctrines *either* of the "Principles of Human Knowledge" *or* of the "Essay towards a New Theory of Vision."

2. Sketch Berkeley's Theory of Visual Language.

II. Cicero's *De Finibus Bonorum et Malorum.*

1. State Cicero's objections to the Physics *or* to the Logic of Epicurus.

2. (*a*) Define the term "Finis," as used in Ethics. (*b*) What is the "Finis," according to Epicurus?

3. "Tribus modis video esse a nostris de amicitia disputandum." Distinguish these three methods, *or* the three kinds of "cupiditates," recognized by Epicurus.

4. State Cicero's objections to the Epicurean definition of pleasure, *or* to the Epicurean theory of friendship.

5. "Tres sunt fines expertes honestatis, unus Aristippi vel Epicuri, alter Hieronymi, Carneadis tertius; tres, in quibus honestas cum aliqua accessione, Polemonis, Calliphonis, Diodori; una simplex, cujus Zeno auctor, posita in decore tota, id est, in honestate." Translate, and write a brief note on each of the philosophers mentioned.

B.A. HONOURS.

MODERN PHILOSOPHY.

FRIDAY, 29TH MARCH:—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Give some account of any great Empirical thinker prior to Locke.

2. Give a brief history of English Idealism prior to Berkeley.

3. Sketch the course of Locke's influence on speculation, either in England or in France.

4. Explain Hume's analysis of Causality, and its bearing on his speculations with regard to Miracles and the Existence of God.

5. Sketch the systems of any two of the following:—Berkeley, Descartes, Locke, Leibnitz.

6. Explain the relation of Kant's three Critiques.

B.A. HONOURS.

LORIMER'S INSTITUTES OF LAW.

MONDAY, 8TH APRIL:—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Distinguish the two sources of Natural Law.

2. Explain the relation of the Historical Method to the Philosophical.

3. What is meant by the Autonomy of Human Nature?

4. Distinguish Natural and Positive Laws.

5. Show that Positive Laws cannot alter facts.

6. Write a note on the distinction between Perfect and Imperfect Obligations.

7. Discuss the relation of Jurisprudence and Ethics, *or* that of Liberty and Order, *or* that of Liberty and Equality.

8. Distinguish the two sources of Positive Law, and give each in detail.

B.A. HONOURS.

MURRAY'S OUTLINE OF HAMILTON'S PHILOSOPHY, AND MILL'S LOGIC, BOOK VI.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain Hamilton's definition of Philosophy, *or* his classification of the Philosophical Sciences.

2. (*a*) What is meant by a Mental Power? (*b*) Distinguish Faculty and Capacity.

3. Illustrate the law of the relation between Sensation and Perception, *or* give the classification of the Qualities of Matter.

4. Distinguish the Conservative, the Reproductive, and the Representative Faculties.

5. Give a full account *or* a tabular view of the Conditions of Positive Thought.

6. State Hamilton's Theory of Pleasure and Pain, *or* his defence of the Freedom of the Will.

7. Compare Hamilton's doctrine of the Freedom of the Will with Mill's doctrine of Philosophical Necessity.

8. State different Methods in Social Science, and explain more particularly the Method which Mill regards as alone applicable.

B.A. HONOURS.

SPENCER'S FIRST PRINCIPLES

FRIDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Write a full note on any three of the following subjects:—(*a*) Ultimate scientific and ultimate religious ideas, and their reconciliation; (*b*) Relativity of all knowledge; (*c*) Data of Philosophy; (*d*) The primordial truth which transcends all proof; (*e*) The Law of Evolution in its complete formula; (*f*) Evolution and Dissolution; (*g*) A critique of Spencer's philosophy as expounded in the First Principles.

B.A. HONOURS.

ARISTOTLE'S NICOMACHEAN ETHICS.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

(Answer only eight questions.

1. Define *τέλος, ἐνέργεια, ἔργον, δύναμις, ἕξις.*

2. Give Aristotle's criticism of Plato's theory of *τὸ ἀγαθόν.*

3. Explain Aristotle's general division of the Virtues.

4. Explain his definition of Ethical Virtue, illustrating the definition by an example.

5. *Αὕτη μὲν οὖν ἡ δικαιοσύνη οὐ μέρος ἀρετῆς ἀλλ' ὅλη ἀρετή ἐστιν, οὐδ' ἡ ἐναντία ἀδικία μέρος κακίας ἀλλ' ὅλη κακία.* Explain.

6. Distinguish (*a*) Distributive and Corrective, (*b*) Political and Economical, (*c*) Natural and Legal, Justice.

7. Distinguish *ἐπιείκεια* and *δικαιοσύνη.*

8. Define *τέχνη, ἐπιστήμη, φρόνησις, σοφία, νοῦς.*

9. Whether is incontinence in regard to *θυμὸς* or in regard to *ἐπιθυμία* the worse vice? Explain Aristotle's answer.

10. (*a*) Distinguish the three things loved (*φιλητὰ*), and the three corresponding forms of Friendship. (*b*) Which of these prevails in youth; which, in age? (*c*) Which is most perfect and lasting; and among whom does it prevail?

11. Should a man love himself or another more? Explain Aristotle's answer.

12. Sketch briefly Aristotle's theory of pleasure.

B.A. HONOURS.

ZELLER'S STOICS, EPICUREANS AND SCEPTICS.

TUESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Describe the political and intellectual causes which contributed to the development of post-Aristotelian philosophy, *or* the peculiar characteristics of that philosophy.

2. Explain the general problem proposed to the Stoical philosophy, *or* its theory of knowledge.

3. Explain the Materialism of the Stoics, *or* their views on the nature of man.

4. Explain either their abstract theory of Morals, *or* that theory as modified in practice.

5. Give some account of their relation to the popular religion.

6. Sketch the Canonic of the Epicureans.

7. State their views *either* on Nature *or* on Religion.

8. Explain their general theory of Morals.

9. Give some account *either* of the Pyrrhonists *or* of the New Academy.

B.A. HONOURS.

THE PHILOSOPHY OF KANT.

SATURDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

(*Answer the last question, and any six of the remainder.*)

1. Give a summary of the Transcendental Æsthetic.

2. Explain the Table of the Categories.

3. Explain the Postulates of Empirical Thought.

4. Give the system of Transcendental Ideas, and the Dialectical Conclusions based on them.

5. State the various proofs for the existence of the Ideal of Pure Reason.

6. Show that these proofs all ultimately rest on one.

7. Explain the difference in the order of treatment between the Critique of Pure Reason and the Critique of Practical Reason.

8. Explain the Object *or* the Motive of Pure Practical Reason.

9. State the Antinomy of Practical Reason, and its solution.

10. Sketch the Analytic *or* the Dialectic of Teleological Judgment.

B.A. HONOURS.

SPINOZA'S ETHICS.

MONDAY, APRIL 22ND:—MORNING 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. "Res extensa et res cogitans sunt Dei attributa" (I. 14, Cor. 2). Explain.

2. "Mens humana pars est infiniti intellectus Dei" (II. 11, Cor.) Explain.

3. Define the different kinds of cognition, distinguished by Spinoza.

4. "Mentis *actiones* ex solis ideis adaequatis oriuntur; *passiones* autem a solis inadaequatis pendent" (III. 3). Explain by reference to the definition of *actio* and *passio*.

5. Define the primitive affections (affectus primitivi) distinguished by Spinoza, and specify two or three varieties of each.

6. Define Bonum, Malum, Virtus.

7. Explain the titles of the fourth and fifth Parts of the Ethics:—"De Servitute Humana seu de Affectuum Viribus," and "De Potentia Intellectus seu de Libertate Humana."

8. Explain what Spinoza means by "amor Dei intellectualis."

B.A. HONOURS.

MAINE'S ANCIENT LAW.

WEDNESDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Describe the jural condition of primitive society before the formation of codes.

2. Explain the agencies by which Law is brought into harmony with a progressive society.

3. Sketch the origin and development of the *Jus Gentium*.

4. Explain the nature and origin of the Roman Patria Potestas.

5. Illustrate the condition of ancient society by the early history of Testamentary Succession *or* of Property.

6. Relate the early history of Criminal Jurisprudence.

FRENCH.

FIRST YEAR.

THURSDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L., LL.D.

1. Translate into English:

M. I. Oui; mais quand tu dis *U* qu'est-ce que tu fais?

N. Je fais ce que vous me dites.

M.J. Oh! l'étrange chose que d'avoir affaire à des bêtes! Tu allonges les lèvres en dehors, et approches la machoire d'en haut de celle d'en bas; *U*, vois-tu? je fais la moue: *U*

M.J. C'est bien autre chose, si vous aviez vu *O*, et *D A*, *D A*, et *f A A*!

Mme. J. Qu'est-ce donc que tout ce galimatias-là?

N. De quoi est-ce que tout cela guérit?

M.J. J'enrage quand je vois des femmes ignorantes.

Mme. J. Allez, vous devriez envoyer promener tous (*a*) ces gens-là avec leurs fariboles.

N. Et surtout ce grand escogriffe de maître d'armes qui remplit de poudre tout mon ménage.

M.J. Ouais! ce maître d'armes vous tient au cœur! je te veux faire voir ton impertinence tout à l'heure. (Après avoir fait apporter des fleurets, et en avoir donné un à Nicole.) Tiens (*b*), raison démonstrative, la ligne du corps. Quand on pousse en quatre, on n'a qu'à faire cela, et, quand on pousse en tierce, on n'a qu'à faire cela. Voilà le moyen de n'être jamais tué; et cela n'est-il pas beau, d'être assuré de son fait quand on se bat contre quelqu'un? Là, pousse un peu (*c*) pour voir.

LE BOURGEOIS GENTILHOMME, Acte III, Sc. 3.

2. (*a*) *Tous*, why not *toutes*? Give the rules of the adjectives referring to the mot *gens*. (*b*) What is the infinitive of *tiens*? What is its meaning? What is its idiomatical meaning here? (*c*) What is the common meaning of *un peu*? What does it mean here?

3. State briefly what you think of the comedy, *Le Bourgeois Gentilhomme*.

4. Translate into French: I saw yesterday *a friend of mine* in the street; *I went to him*, and we had a pleasant conversation together; *I said to him* I was delighted *to see him*. Explain how *a friend of mine* is to be written, and *went to him*, *said to him* and *to see him*.

5. Translate: I went to, and came back from Quebec yesterday. Explain.

6. State six instances where you have to use the *Subjunctive mood*.

7. State two instances when you have to use the Pluperfect of the *Subjunctive mood*.

8. Give the rules to write the past participles of the reflective verbs. Write correctly: Ces enfants après s'être *dit* des injures se sont *sauvé*.

9. Give four instances when you use *ne* in French where there is no negative idea.

10. Translate: He will come *on* Wednesday; He returns from school *in* the afternoon. Explain how you translate *on* and *in*.

11. What difference is there between *avant* and *devant*; and *entre* and *parmi*.

12. *Translate*: That dress fits her well. Go for your book. To go to

vote. To look well. To be full of business. To give full power. His honour is at stake. Faire grâce à quelqu'un. Faire faire un habit. Faire semblant. Faire des contes à dormir debout. Faire un pas de clerc. Faire un coup de main.

13. *Translate* : The mother thought she had said enough, and flew away. But the little one, laughing at her advice, said to herself: "Aged people are always too careful. Why to wish to deprive me of the innocent pleasure of fluttering a little over this smoking spring? Have I not wings, and am I not prudent enough to avoid accidents. In short, mamma, it is in vain for you to talk and to allege your experience to me. I will amuse myself in fluttering a little around the spring, and I should like to know what would make me go down into it." So saying she flies off; but she was scarcely over the pot, when, made giddy by the steam which was rising from it, she fell in, and died.

INTERMEDIATE EXAMINATION.

FRENCH.

THURSDAY, APRIL 11TH :—MORNING, 9 TO 12.

Examiners,..... ..... { P. J. DAREY, M.A., B.C.L. LL.D. / REV. PROF. CHS. TANNER.

1. Where is the Preposition placed in French? What is the only exception? Give two examples.

2. When is *que* a relative pronoun, an adverb, a conjunction? Give an example of each.

3. In what three different ways is *quelque* written? Give an example of each.

4. What does the preterite definite express and when is it used?

5. State two cases when the *Imperfect of the Subjunctive* is to be used. Give examples.

6. Translate into French: those boys did not defend themselves well, I ave seen them beaten; and explain how *defend* and *seen* are to be written

IPHIGÉNIE.

7 Ah! cruel! cet amour, dont vous voulez douter,
Ai-je attendu si tard pour le faire éclater?
Vous voyez de quel œil, et comme, indifférente,
J ai reçu de ma mort la nouvelle sanglante :
Je n'en ai point pâli. Que n'avez-vous pu voir
A quel excès tantôt allait mon désespoir,
Quand, presque en arrivant, un récit peu fidèle
M'a de votre inconstance annoncé la nouvelle!

Quel trouble, quel torrent de mots injurieux
Accusait à la fois les hommes et les dieux!
Ah! que vous auriez vu, sans que je vous le dise,
De combien votre amour m'est plus cher que ma vie!
Qui sait même, qui sait si le ciel irrité
A pu souffrir l'excès de ma félicité?
Hélas! il me semblait qu'une flamme si belle
M'élevait au-dessus du sort d'une mortelle!

IPHIGÉNIE, Acte III, Scène VI.

8. Translate into English:

Tyrrel, seul,
L'aimable enfant!
Sans regretter son or, il s'en va triomphant!
(Après une pause.)
Il sera beau joueur. Même beauté! même âge!
J'ai cru sentir encore passer sur mon visage
Ces lèvres qui jadis...Non, froides pour jamais,
Plus jamais de baiser des lèvres que j'aimais!
Mortes, mortes!.....Pourquoi cette retraite austère?
Le sacre dans deux jours va les rendre à leur mère?
Qu'ils l'embrassent plus tôt, le mal n'est pas si grand.
La reine est là, chez moi, priant tout bas, pleurant,
Toujours là comme un marbre, immobile à sa place,
Nous autres vieux pécheurs, dont le cœur est de glace
Contre des pleurs de femme, un enfant nous émeut.
Ce petit vaurien-là fait de moi ce qu'il veut.
Ah! c'est qu'il lui ressemble!.....On s'approche, silence!
La lueur de flambeaux m'annonce sa présence:
C'est le régent. Sans doute il vient leur déclarer
Qu'on a fixé le jour qui doit les délivrer.

LES ENFANTS D'EDOUARD, Acte III, Scène III.

9. Translate into French:

Rasselas, chapter 45.

The evening was now far spent, and they rose to return home. As they walked along the bank of the Nile, delighted with the beams of the moon quivering on the water, they saw at a small distance an old man whom the prince had often heard in the assembly of the sages. "Yonder," said he, "is one whose years have calmed his passions, but not clouded his reason; let us close the disquisitions of the night, by inquiring what are his sentiments of his own state, that we may know whether youth alone is to struggle with vexation, and whether any better hope remains for the latter part of life."

10. Give a sketch of the life of Montaigne.

Give a sketch of the life of Malherbe.

Give a sketch of the life of Molière.

Give a sketch of the life of Fénélon.

11. Who wrote la *Satire Ménippée* ? Say what you know of it.

Who wrote la *Vie de Gargantua?* What other works has that author written.

Who wrote l'*Histoire de Charles VII?* Say what you know of the author of it?

What is known under the name of *Pleiade ?* What was its object?

Who has written l'*Art poétique?* What other works has that author written?

THIRD YEAR.

FRENCH.

WEDNESDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L., LL D.

Toutes les réponses devront être faites en français.

1. Traduisez en anglais :

Tel est ce Richelieu, et, par un heureux destin, il rencontre sur le trône l'homme le mieux fait pour seconder passivement ses vues. Monarque languissant, triste et cruel, Louis XIII a toutes les infirmités et tous les vices voulus par son rôle. Sa faiblesse l'assujettit ; sa mélancolie le retient à l'écart ; sa cruauté vient en aide aux rigueurs systématiques du ministre. A être sans pitié il se dédommage de l'humiliation d'obéir. Ordonner des supplices dont la portée lui échappe est, pour lui, une manière d'être roi. Notons en outre que Louis XIII était brave de sa personne, et que le goût des armes pouvait seul le tirer de la somnolence où le plongeaient de mystiques amours. Disons-le tout d'abord : Richelieu n'avait pas d'entrailles pour le peuple, et jugeait la bourgeoisie en grand seigneur. Le peuple, il le comparait aux mulets, qui se gâteraient par le repos.

LOUIS BLANC.

2. Quand est-ce que vécurent Louis XIII et Richelieu? Citez quelques faits qui se rapportent à la vie de Richelieu.

3. Donnez un court aperçu de la vie de *St Marc Girardin, de Tocqueville, Sainte-Beuve, Guizot, Béranger, Volney, Bernardin de St. Pierre.* Citez les ouvrages qu'ils ont écrits. Quand vécurent-ils ?

4. Qui est-ce qui a écrit la *Henriade*, l'*Emile*, les *Lettres persannes*, les *Adieux à la vie*, l'*Introduction à la connaissance de l'esprit humain*, le *Traité des études*, la *Chute des feuilles*, l'*Itinéraire de Paris à Jérusalem*, les *Considérations sur la Révolution française*, les *Feuilles d'Automne*, les *Messéniennes*.

5. Faites le résumé du IIIe Acte du Cid.

6. Traduisez en anglais :

Qu'on nomme crime ou non ce qui fait nos débats,
Sire j'en suis la tête, il n'en est que le bras.
Si Chimène se plaint qu'il a tué son père,
Il ne l'eût jamais fait s'il l'eusse pu faire.
Immolez donc ce chef que les ans vont ravir,
Et conservez pour vous le bras qui peut servir.
Aux dépens de mon sang satisfaites Chimène,
Je n'y résiste point, je consens à ma peine ;
Et loin de murmurer d'un rigoureux décret,
Mourant sans déshonneur, je mourrai sans regret.

CORNEILLE, *le Cid*, Ac. II, Sc. IX.

7. Quelle grande vertu Corneille enseigne-t-il dans *le Cid?*

8. Traduisez en français :

For some time he thought choice needless, because all appeared to him equally happy. Wherever he went he met gaiety and kindness, and heard the song of joy or the laugh of carelessness. He began to believe that the world overflowed with universal plenty, and that nothing was withheld either from want or merit, that every hand showered liberality, and every heart melted with benevolence, and who then, says he, will be suffered to be wretched.

JOHNSON, *Rasselas*, Ch. XVII.

9. *Traduisez en français :* The servant will mind the house while we are gone. Don't give in, we have only about a mile to go. He was busy reading when I called this morning upon him. He will complain of that to your father. It is to be regretted that he is so careless with his books. My father's house is a four-storied one. Tell the gardener the rope of the well is broken, he cannot have noticed it. He reckons upon seeing us to-morrow. Don't cut your nails in company, it is unbecoming. He must make up his mind to start to-morrow, for if he delays any longer, he will arrive too late. *Et en anglais :* Vous prenez comme argent comptant tout ce qu'il dit. Maintenant il ne s'agit que d'y réussir. Le pays fut obligé de plier sous le joug de ses envahisseurs. Pour peu que vous vous remuiez un peu vous réussirez dans cette affaire. Tel, qui rit aujourd'hui, dimanche pleurera. Votre sœur est très louche, elle tient de sa mère. Si vous tenez à ce que je fasse cela pour vous, il faut mieux vous conduire. Cet homme est fier, bourru, mesquin, je n'en fais pas grand cas.

COGERY, *Third French Course.*

FOURTH YEAR.

FRENCH.

WEDNESDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners,..... { P. J. DAREY, M.A., B.C.L., LL.D.
REV. PROF. CHAS. TANNER.

1. Qui est l'auteur *du Cid*, où et quand naquit-il ? Ecrivez une courte biographie de cet auteur. De qui a-t-il imité *le Cid?* Donnez une liste de huit de ses pièces. Quelle est sa meilleure comédie ?

2. Donnez un aperçu du contenu du cinquième acte.

3. Traduisez en anglais :—

Généreux héritier d'une illustre famille
Qui fut toujours la gloire et l'appui de Castille,
Race de tant d'aïeux en valeur signalés,
Que l'essai de la tienne a sitôt égalés,
Pour te récompenser ma force est trop petite ;
Et j'ai moins de pouvoir que tu n'as de mérite.
Le pays délivré d'un si rude ennemi,
Mon sceptre dans ma main par la tienne affermi,
Et les Maures défaits avant qu'en ces alarmes
J'eusse pu donner ordre à repousser leurs armes,
Ne sont point des exploits qui laissent à ton roi
Le moyen ni l'espoir de s'acquitter vers toi.
Mais deux rois tes captifs feront ta récompense :
Ils t'ont nommé tous deux leur Cid en ma présence.
Puisque Cid en leur langue est autant que seigneur,
Je ne t'envierai pas ce beau titre d'honneur.
Sois désormais le Cid ; qu'à ce grand nom tout cède ;
Qu'il comble d'épouvante et Grenade et Tolède,
Et qu'il marque à tous ceux qui vivent sous mes lois
Et ce que tu me vaux, et ce que je te dois.

LE CID, Acte IV., Scène III.

4. *Don Dièque*—Rodrigue as-tu du cœur ?
Don Rodrigue Tout autre que mon père
L'éprouverait sur l'heure
Don Dièque Agréable colère !
Digne ressentiment à ma douleur bien doux.

5. Que veulent dire ces vers : *Rodrigue as-tu du cœur, etc.*, remplacer ce mot *éprouverait* par un synonyme. Comment expliquez-vous cet adjectif *agréable* dans ces mots *agréable colère*. Décomposez agréable.

6. Traduisez en français :—

The truth is, that the temptations to which so many English function-

aries yielded in the time of Mr. Vansittart were not temptations addressed to the ruling passions of Warren Hastings. He was not squeamish in pecuniary transactions; but he was neither sordid nor rapacious. He was far too enlightened a man to look on a great empire merely as a buccaneer would look on a galleon. Had his heart been much worse than it was, his understanding would have preserved him from that extremity of baseness. He was an unscrupulous, perhaps an unprincipled statesman; but still he was a statesman, and not a freebooter.

MACAULAY, Warren Hastings.

7. Donnez un aperçu de la vie et des œuvres de Louis de Fontanes.
" " " Georges Cuvier.
" " " Alphonse de Lamartine.
" " " Alexandre Vinet.
" " " Ernest Renan,
" " " Ernest Havet.

8. Qui est-ce qui a écrit *les Mémoires d'outre tombe; l'Allemagne, Hernany, le roi d'Yvetot, les Messéniennes, l'Histoire de la civilisation en Europe, l'Histoire des ducs de Bourgogne, l'Histoire des Croisades?*

9. *Traduisez en anglais:* Son fusil vint à lâcher. Elle a l'air comme il faut. Je la lui garde bonne. Jouer de malheur. Je lui ai mandé cette nouvelle. Être d'une affaire. Qu'a-t-on arrêté? Battre froid à quelqu'un. Si le cœur vous en dit. Il s'agit de savoir qui a fait cela. *Et en français:* What is that to you? To tire out one's patience. To pay the piper. The sun breaks through the clouds. To draw a deed. To pass from one discourse to another. To make a pass (in fencing). To speak at random. He acted slily. To strive to outwit one another.

10. Traduisez en anglais:

Redevenu maître de moi-même, je lui jetai un regard de mépris et m'en allai. Cet homme est trop au-dessous de vous pour que vous le fréquentiez. Il est temps que vous partiez, de peur que vous n'arriviez trop tard. Tous les jours étaient devenus des jours de fêtes chez nous. Vous pouvez prendre ce bouquet, ma sœur n'y tient pas. Un pareil homme est un véritable fléau, il serait à désirer qu'on en délivrât le monde. Ne vous dérangez pas, je serais si fâché de vous déranger. Combien de temps faudra-t-il pour finir ce travail? Il y avait dedans plus d'argent que je n'en eusse jamais possédé. Quand Arthur fut sorti, je demandai à son père la cause de sa tristesse.

11. Traduisez en français:

Whatever you may say, something ought to advise you not to do it You take for truth all he tells you. With every acquirement there is an apprenticeship to serve. He took my hand, and in a low tone bade me good-bye. The colour of your dress has faded; why don't you have it dyed? Although this letter does not contain anything positive; yet there

are, I think, some reasons for much hope. You have only to apply a little perseverance ; although the success is doubtful. Sir, will you please be a protector to me. One place is close by yours. If he particularly wishes me to help him, he must behave better.

B.A. HONOURS.

FRENCH.

GRAMMAIRE HISTORIQUE, LITTÉRATURE FRANÇAISE ET TRADUCTION.

FRIDAY, APRIL 5TH:—MORNING, 9 TO 1 P.M.

Examiner,.....P. J. DAREY, M.A., LL.D.

1. Combien de langues parlait-on en Gaule du temps de Charlemagne ? Où les parlait-on respectivement ?

2. Comment la langue française se répandit-elle en Gaule ?

3. A quelle époque eut lieu la dernière invasion des barbares en Gaule ? Quels furent ces barbares, et où s'établirent-ils ?

4. Donnez des preuves de l'originalité artistique de la langue française au XIIe siècle.

5. Quel grand monument de notre langue remonte à cette époque ? Dites ce que vous en savez.

6. Qu'est-ce que vous entendez par les *patois* ? Quels étaient les principaux patois en France ? De quel patois le français est-il dérivé ?

7. Enumérez les différents éléments dont la langue française est formée.

8. Traduisez en français moderne ou en anglais, l'extrait suivant de Joinville où il décrit le passage du Nil à Mansourah. 1250 : "Aussi comme l'aube du jour aparait nous nous atirames de tous points ; et quand nous feusmes atirés, nous en alames au flum, et furent nos chevaux à nou. Quand nous feumes alés jusqu'en mi le flum, si nous trouvames terre, là où nos chevaux pristent pié ; et sur la rive du flum trouvames bien trois cens Sarrazins touz montés sur leurs chevaux. Lorr diz-je à ma gent : "Seigneurs ne regardez qu'à main senestre ; pour ce que chacun y tire, les rives sont moillées et les chevaux leur chéent sur les cors et les noient.

9. Racontez les origines et les transformations du théâtre—Mystères—Farces et Moralités.

10. Dites tout ce que vous savez de Montluc et de Montaigne. Qu'est-ce qu'ils ont écrit ? Donnez une idée du caractère et du style de leurs écrits.

11. Qui étaient les principaux contemporains de Calvin ? Quel est son principal ouvrage ? A qui l'adressa-t-il ?

12. Faites connaître le *Philosophe sous les toits*. De quoi est-il question dans cet ouvrage ? A quoi répondent les différents chapitre de ce livre.

13. Traduisez en anglais les passages suivants tirés du *Philosophe sous les toits* :—J'ai bien eu aussi des instants, me disait-il l'autre jour, où j'aurais été porté à *cousiner avec le diable*. La guerre n'est pas précisément une école de vertus champêtres. A force de brûler, de démolir et de tuer vous vous racornissez un peu à l'endroit des sentiments, et quand la baïonnette vous a fait roi, il vous vient parfois des idées d'autocrate un peu fortes en couleur.

J'avais mis une sourdine à ma chanterelle.—Excellent homme il se gênait pour moi.

14. Traduisez en français :—

Celia. Young gentleman, your spirits are too bold for your years. You have seen cruel proof of this man's strength ; if you saw yourself with your eyes, or knew yourself with your judgment, the fear of your adventure would counsel you to a more equal enterprise. We pray you, for your own sake, to embrace your own safety, and give over this attempt.

Rosalind. Do young sir ; your reputation shall not therefore bet misprised : We will make it our suit to the duke, that the wresling migh not go forward.

Orlando. I beseech you, punish me not with your hard thoughts : wherein I confess me much guilty, to deny so fair and excellent ladies anything. But let your fair eyes and gentle wishes go with me to my trial : wherein if I am foiled, there is but one shamed that was never gracious ; if killed, but one dead that is willing to be so, I shall do my friends no wrong, for I have none to lament me ; the world no injury, for I have nothing ; only in the world I fill up a place, which may be better supplied when I have made it empty.

SHAKESPERE, *As you like it.* A. 1, Sc. II.

B.A. HONOURS

FRENCH.

THURSDAY, APRIL 25TH :—MORNING, 9 TO 1, P.M.

Examiner,..... .....P. J. DAREY, M.A., LL.D

1. Le *Misanthrope* de Molière est-il à proprement parler une comédie ? Expliquez votre réponse.

2. Faites l'analyse du *Misanthrope*.

3. Quelles critiques J. J. Rousseau fait-il du Misanthrope ?

4. Traduisez :

..... il faut qu'un galant homme ait toujours grand empire
Sur les démangeaisons qui nous prennent d'écrire.
— Pour les trouver ainsi vous avez vos raisons,
Mais vous trouverez bon que j'en puisse (*a*) avoir d'autres
Qui se dispenseront de se soumettre aux vôtres

(*a*) Pourquoi le subjonctif?

— faut-il de vos chagrins sans cesse à moi vous prendre ?

— Oronte et lui se sont tantôt (*b*) bravés.

(*b*) Qu'est-ce que vous remarquez sur le mot *tantôt* ?

5. Analysez *Hernani.*

6. Traduisez :

— Les hommes !—C'est-à-dire une foule, une mer,
Un grand bruit ; pleurs et cris, parfois un rire amer ;
Plainte qui, réveillant la terre qui s'effare,
A travers tant d'échos, nous arrive fanfare !
Les hommes ! des cités, des tours, un vaste essaim,—
De hauts clochers d'église à sonner le tocsin !—
Base des nations portant sur leurs épaules
La pyramide énorme appuyée aux deux pôles,
Flots vivants, qui toujours l'étreignant de leurs plis,
La balancent, brûlante, à leur vaste roulis,
Font tout changer de place et, sur ses hautes zônes
Comme des escabeaux font chanceler les trônes
Si bien que tous les rois, cessant leurs vains débats,
Lèvent les yeux au ciel.

7. Ecrivez une biographie aussi complète que possible de Victor Hugo.

8. Donnez une idée du livre des *Essais.* Quelle méthode Montaigne a-t-il suivie dans la composition des *Essais ?*

9. Quelles étaient les idées religieuses de Montaigne ?

10. Qu'est-ce que vous pensez du style de Montaigne ?

11. Faites connaître la vie de La Rochefoucauld ? Citez quelques-unes de ses *Maximes.*

13. Ecrivez en français moderne :

J'ay veu plusieurs de mon temps, convaincus par leur conscience, retenir de l'aultruy, se disposer à y satisfaire par leur testament et aprez leur decez Il ne font rien qui vaille, ny de prendre terme à chose si pressante, ni de vouloir restablir une injure avecques si peu de leur ressentiment et interest. Ils doibvent du plus leur ; et d'autant qu'ils payent plus poisamment et incommodément, d'autant en est leur satisfaction plus juste et méritoire : la pénitence demande à charger. Ceux-là font encore pis, qui reservent la déclaration de quelque haineuse volonté envers le proche à leur dernière volonté, l'ayant cachée durant leur vie. Je me garderay, si je puis, que ma mort die chose que ma vie n'ayt premièrement dict et apertement.

MONTAIGNE.

FIRST YEAR.

GERMAN.

THURSDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,.....P. TOEWS, M.A

I. Translate into English:—

Der Engel, der die Blumen verpflegt und in ſtiller Nacht den Thau darauf träufelt, ſchlummerte an einem Frühlingstage im Schatten eines Roſenſtrauchs Und als er erwachte, da ſprach er mit freundlichem Antlitz: "Lieblichſtes meiner Kinder, ich danke dir für deinen erquickenden Wohlgeruch und für deinen kühlen Schatten. Könnteſt du dir noch etwas erbitten, wie gern würde ich es dir gewähren."—"So ſchmücke mich mit einem neuen Reize," flehte darauf der Geiſt des Roſenſtrauchs. Und der Blumenengel ſchmückte die ſchönſte der Blumen mit einfachem Mooſe.

Lieblich ſtand ſie da in beſcheidenem Schmuck, die Mooſsroſe, die ſchönſte ihres Geſchlechts.

Krummacher.

1. Give the plural of Engel, Schatten, Geſchlecht.

2. Parse ſprach, könnteſt, ſtand. Give the infinitive.

3. Parse Nacht. Give the plural.

II. Translate into German:

Where are our guests? (Gaſt) They became tired and are now in the garden. We have rowed (rudern) a long while (lange) against the stream (Strom, m.)

III. Give a list of those prepositions which govern both the dative and the accusative, and state when they govern the dative, and when they govern the accusative.

IV. Translate:—This week (Woche f.) I sent (ſchicken) my brother a letter. Yesterday I returned (zurückſchicken) him his books. Have you paid the shoemaker (Schuhmacher) for your boots? (Stiefel m.) My brother said, he had no time to learn his lesson.

V. Name five prepositions, which govern the dative only.

VI. We have looked for (ſuchen) William's books everywhere (überall). The streets of Paris are wide (breit) and beautiful. The city of Berlin is the capital (Hauptſtadt f.) of the Kingdom (Königreich) of Prussia.

VII. Name the prepositions which govern the genitive.

State the gender of names of metals and names of countries. What is the gender of Woche, Gahr, Stahl (steel) Schweiz?

INTERMEDIATE EXAMINATION.

THURSDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner.....P. TOEWS, M. A.

I. Translate:—Eben hatte es aufgehört mit Wolkenbrechen und Windwirbeln, die goldene Ruhe breitete sich aus am blauen Morgenhimmel; ich sah die Wasser sich sammeln und ihren Weg zwischen den Felskanten suchen hinab in die Fluth; gestürzte Tannen brachen den brausenden Wassersturz, und Felssteine spalteten seinen Lauf; er war unaufhaltsam; er riß mit sich, was nicht widerstehen konnte. Da überkam mich eine so gewaltige Lust—ich konnte auch nicht widerstehen: ich schürzte mich hoch, der Morgenwind hielt mich bei den Haaren im Zaum; ich stützte beide Hände in die Seite, um mich im Gleichgewicht zu halten, und sprang hinab in kühnen Sätzen von einem Felsstück zum andern, bald hüben bald drüben, das brausende Wasser mit mir, kam ich unten an.

Bettina An Göthe.

1. Accent:—aufgehört, Felskanten, unaufhaltsam, widerstehen, überkam

2. Parse riß, überkam, sprang.

Give the principal parts of these verbs.

3. Decline Fluth and Felsstück.

4. Translate: Would you have resisted them?

GRAMMAR.

I. Translate:—The pupils would have looked for the words in a dictionary (Wörterbuch) if they had had time. If Charles is not ready, we shall go without him to Germany. I laid the pens upon the table, but they are no longer there.

II. Distinguish between legen, stellen, setzen.

III. Translate:—I remained at home on account of my child. We went out during the rain. He will come instead of my friend. I bought Schiller's William Tell at a bookseller's in Hamilton. What volumes are on the table in your library?

IV. Distinguish between der Schild and das Schild. How is the plural formed?

THIRD YEAR.

THURSDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner, ...P. TOEWS, M.A.

I. Translate.—

Ich war noch sehr verstört, als der Wagen vor meinem alten Wirthshause

hielt; ich erschrak über die Vorstellung, nur noch jenes schlechte Dachzimmer zu betreten. Ich ließ mir meine Sachen herabholen, empfing den ärmlichen Bündel mit Verachtung, warf einige Goldstücke hin, und befahl, vor das vornehmste Hotel vorzufahren. Das Haus war gegen Norden gelegen, ich hatte die Sonne nicht zu fürchten.

Chamisso, Peter Schlemihl.

1. Hielt, erschrak, betreten, Conjugate throughout the present indicative, singular.

2. Translate: I shall have him arrested (arretiren).

3. Befahl. Translate: He ordered me to do it.

4. Accent the following words: herabholen, empfing. vorzufahren.

5. Give the plural of Hotel.

II. Translate:

v. Tellheim. Ganz gewiß, gnädige Frau. Marloff ist mir nichts schuldig geblieben. Ich wünschte mich auch nicht zu erinnern, daß er mir jemals etwas schuldig gewesen wäre. Nicht anders, Madame; er hat mich vielmehr als seinen Schuldner hinterlassen. Ich habe nie etwas thun können mich mit einem Mann abzufinden der sechs Jahre Glück und Unglück, Ehre und Gefahr mit mir getheilt.

Lessing, Minna von Barnhelm.

1. Give the plural of Frau. How was the nominative singular spelled formerly?

2. Accent hinterlassen.

3. Thun können. Translate: I could not have done it. If he could have done it.

GRAMMAR.

I. State the rule concerning the place of objects in German.

II. Translate:—I sent my father a letter yesterday. He has given it to her. We have given them that. He has studied the book very diligently at home. On what are you sitting? Whose children have been praised? The young lady, whose sister was punished, because she had not studied her lesson. Shall we be permitted to burn our exercises, when we have finished them? (fertig sein mit).

III. Distinguish between der Band and das Band, der Thor and das Thor. How is the plural formed?

IV. Decline: Good red wine (Wein, m.)

LITERATURE.

I. Give briefly the plot of the "Song of the Nibelungen."

II. Name the principal works of Lessing.

III. Name the authors of the following works: Oberon, Goetz von Berlichingen, Maria Stuart.

IV. Briefly sketch the life of Goethe.

B. A. ORDINARY EXAMINATION.

THURSDAY, APRIL 18TH :—MORNING, 9 TO 12.

Examiner..... P. TOEWS, M.A.

I. Translate into English:

Ob Du Dich darin geirrt und den Irrthum nachher schmerzlich abgebüßt hast, das soll hier nichts zur Sache thun und Du wirst Dich auch selbst wohl mit dem herben Nachschmack nicht freiwillig betrüben wollen. Aber rufe jene dansprechliche süße Ahnung, jenen englischen Gruß des Friedens wieder in Dir her auf und Du wirst ungefähr wissen können, wiedem Ritter Huldbrand während seines Lebens auf der Seespitze zu Sinne war..... Einen Theil des Tages über strich er mit einer alten Armbrust, die er in einem Winkel der Hütte gefunden und sich aufgebessert hatte, umher, nach den vorüberfliegenden Vögeln lauernd, und was er von ihnen treffen konnte, als guten Braten in die Küche liefernd.

Fouqué, Undine.

Give the plural of Irrthum and state the gender of Nachschmack. Wollen. Translate:—He would not have been willing to do it. Distinguish beween der Theil and das Theil.

II. Translate into English :—

Herzogin (sich bittend an ihn schmiegend).
O, wenn's noch Zeit ist, mein Gemahl, wenn es
Mit Unterwerfung, mit Nachgiebigkeit
Kann abgewendet werden,—geben Sie nach!
Gewinnen Sie's dem stolzen Herzen ab!
Es ist ihr Herr und Kaiser, dem Sie weichen.
O! lassen Sie es länger nicht geschehn,
Daß hämische Bosheit Ihre gute Absicht
Durch giftige, verhaßte Deutung schwärze!
Mit Siegeskraft der Wahrheit stehn Sie auf,
Die Lügner, die Verleumder zu beschämen!
Wir haben so der guten Freunde wenig.

Schiller Wallenstein.

Abgewendet. Write a note on the conjugation of wenden.

Gewinnen. Translate into German: if I won.

III. Translate into German:

When my horse at last held still, and I had seated myself properly in the saddle, I saw beside me a very strange and ugly little man. He was all yellow, and his nose was at least a foot long. He asked me for a piece of money, and said he had checked the course of my horse. That was a lie, but I gave him a gold piece, in order to get rid of him, and trotted on. He followed after me, and cried "false money!" I galloped as fast as possible, but he was the whole time by my side. Then I stopped and wanted to give him another, but he would not take it. And he showed me the goblins under the earth, how they played with silver and gold; and he showed them my gold piece, and they laughed and hissed, stretching out their dirty fingers.

LITERATURE.

I. Write a short criticism on "Götz von Berlichingen."

II. Describe the character of Faust in Goethe's tragedy.

III. Briefly sketch the life of Schiller and name his principal historical dramas.

IV. Name the principal poets of the Suabian school.

B. A. HONOURS.

SATURDAY, APRIL 13th:—MORNING, 9 TO 12.

Examiner.....P. TOEWS, M.A.

I. Translate:

Nathan, vielmehr, du läßt dich gern belehren.—
Sieh! eine Stirn, so oder, so gewölbt;
Der Rücken einer Nase', so vielmehr
Als so geführet; Augenbrauen, die
Auf einem scharfen oder stumpfen Knochen
So oder so sich schlängeln; eine Linie,
Ein Bug, ein Winkel, eine Falt', ein Haar,
Ein Nichts, auf eines wilden Europäers
Gesicht: — und du entkommst dem Feu'r, in Asien!
Das wär kein Wunder, wundersücht'ges Volk?
Warum bemüht ihr denn noch einen Engel?

Lessing, Nathan der Weise.

1. Läßt: Translate:—I have had a house built.

2. Give the plural of Stirn.

3. Augenbrauen: State the gender.

4. Write a note on Geſicht,

II. Translate:

Al-Hafi. Da ſeht nun gleich den Juden wieder;
Den ganz gemeinen Juden! — Glaubt mir's doch! —
Er iſt aufs Geben Euch ſo eiferſüchtig,
So neidiſch! Jedes Lohn von Gott, das in
Der Welt geſagt wird, zög' er lieber ganz
Allein. Nur darum eben leiht er Keinem,
Damit er ſtets zu geben habe. Weil
Die Mild' ihm im Geſetz geboten, die
Gefälligkeit ihm aber nicht geboten, macht
Die Mild' ihn zu dem ungefälligſten
Geſellen auf der Welt. Zwar bin ich ſeit
Geraumer Zeit ein wenig übern Fuß
Mit ihm geſpannt; doch denkt nur nicht, daß ich
Ihm darum nicht Gerechtigkeit erzeige.

Lessing, Nathan der Weiſe.

1. Write a note on Euch and on Lohn.

III. Translate:

Rechnet man dazu die Kälte der Proteſtanten gegen die Bedrängniſſe der Kaiſer und gegen die gemeinſchaftlichen Gefahren des Reichs, ihre gewaltſamen Eingriffe in das Zeitliche der Kirche und ihre Feindſeligkeiten, wo ſie ſich als die Stärkeren fühlten; ſo begreift man, wie ſo viele zuſammenwirkende Gründe die Kaiſer auf der Seite des Papſtthums erhalten, wie ſich ihr eigener Vortheil mit dem Vortheile der katholiſchen Religion aufs genaueſte vermengen mußte. Da vielleicht das ganze Schickſal dieſer Religion von dem Entſchluſſe abhing, den das Haus Oeſterreich ergriff, ſo mußte man die öſterreichiſchen Prinzen durch ganz Europa als die Säulen des Papſtthums betrachten. Der Haß der Proteſtanten gegen letzteres kehrte ſich darum auch einſtimmig gegen Oeſterreich und vermengte nach und nach den Beſchützer mit der Sache, die er beſchützte.

Schiller, Der dreißigjährige Krieg.

1. Zeitliche: Translate: Er hat das Zeitliche geſegnet.

2. Aufs genaueſte: When is the superlative preceded by the article and when by am?

IV. Write in German an essay on one of the following subjets.

Leſſing, Wieland, Goethe.

B. A. HONOURS.

TUESDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiner..... .....P. TOEWS, M.A.

I. Translate into English Goethe, Faust part I. page 18.

Herren. Who is meant?

Write on Haupt und Staatsaction and pragmatiſche Maximen.

II. Translate into English: Faust page 20.

Explain the first six lines.

Fremd und fremder. How should the verse read?

III. Translate into English: Faust. page 28.

To whom does the last verse refer?

Compare briefly Goethe's Faust with the Faust of the puppet plays.

LITERATURE.

I. Name the principal epic poems of Hartmann von Aue and Gottfried von Straßburg.

II. Characterize briefly the works of Wolfram von Eſchenbach.

III. Compare the romances of chivalry with the national epos. To what circumstances does the latter owe its great developement?

IV. Tell what you know about the origin of the song of the Nibelungen.

Schleicher.

I. Define Steigerung. What Steigerungs forms had the original language?

II. Give a tabular view of the primitive vocalisation,

III. On what do the influences, which vowels and consonants have on other vowels near them, rest?

What is the nature of this action in German?

IV. Define Brechung and Umlaut.

HEBREW, ELEMENTARY COURSE.

MONDAY, APRIL 1st:—9–12 A. M.

Examiner, ...REV. PROF. COUSSIRAT, B. A., B. D., OFF. d'ACAD

1. Translate into English:

(1) וַיִּקְרָא אֱלֹהִים לַיַּבָּשָׁה אֶרֶץ וּלְמִקְוֵה הַמַּיִם קָרָא יַמִּים׃
(2) וַיֹּאמֶר א" נַעֲשֶׂה אָדָם בְּצַלְמֵנוּ כִּדְמוּתֵנוּ׃
(3) וַיְבָרֶךְ א" אֶת־יוֹם הַשְּׁבִיעִי וַיְקַדֵּשׁ אֹתוֹ׃
(4) לֹא טוֹב הֱיוֹת הָאָדָם לְבַדּוֹ׳
(5) הַיּוֹם הַשְּׁבִיעִי אֲשֶׁר־בּוֹ שָׁבַת אֱלֹהִים׳

2. Parse the verbs in sentences 2 and 4.

3. Explain the changes of vowels in וַיְבָרֶךְ׃

4. Parse the two last words in sentence 2.

5. Attach one light and one grave suffixes to the singular and plural of מֶלֶךְ and סֵפֶר׃

6. Give a Synopsis of שָׁבַת in Kal and Hiphil.

7. Point and translate the following words:

ומעץ הדעת טוב ורע לא תאכל ממנו׳

8. Render into Hebrew: (1) This is the day which God sanctified. (2) In the garden which God planted was fruit. (3) In the great day. (4) God created them.

9. What is the force of the perfect and imperfect tenses?

10. Read Hebrew with and without vowel-points.

INTERMEDIATE EXAMINATION.

MONDAY, APRIL 1st, 1889:—9–12 A. M.

Examiners,..... { REV. PROF. COUSSIRAT. / REV. PROF. WEIR.

I. Translate into English:— (1) Genesis, Chap. VI., vs. 13–15 inclusive, (2) Exodus, Chap. XX., vs. 23 and 24. (3) Deuteronomy XXXII, vs. 5 and 42. Give various renderings.

II. Parse the following words from the above extracts:—

(1) בָּא: (2) מִפָּנֶיהֶם: (3), מַשְׁחִיתָם: (4) עֲשֹׂה (5) רְחָבָה
(6) רְאֵיתֶם (7) וּבֵרַכְתִּיךָ: (8) אַשְׁכִּיר

(*a*) In (5) what vowel is under Resh? (*b*) What points are in Bêth and Hè?

III. How are weak verbs classified according to the character of the weak consonant or consonants which they contain?

IV. Write a Synopsis of (1) Qal of לָקַח (2) the Hiphil of סָבַב (3) the Niphal of קוּם (4) the Hithpael of גָּלָה

V. Give the construct singular and the absolute and construct plural of דָּבָר and יֶלֶד—and attach the personal pronouns to its singular and plural with the English.

VI. Translate the following, and state the principles of Syntax illustrated by them:—

(1) חֲמֵשׁ שָׁנִים (2) שְׁלֹשִׁים שָׁנָה (3) אַחֲרֵי הוֹלִידוֹ (4) וַאֲנִי
הִנְנִי מֵבִיא (5) בָּעֲשִׂירִי בְּאֶחָד לַחֹדֶשׁ

VII. Turn into Hebrew:—(1) The sun is greater than the moon. (2) God created the heavens and made the luminaries. (3) This is my word which I have spoken to you. (4) Bless thou, my soul, the God of the heavens.

VIII. Explain the use of the perfect and imperfect with Vaw consecutive, and state how they are severally pointed.

IX. Point and translate the following Masoretic notes.

(1) תהלה לאל גדול ונורא׳
(2) סכום פסוקי דספר דברים תשע מאות וחמשים וחמשה׳

X. Reading in Hebrew.

ORDINARY B. A. EXAMINATION.

HEBREW.

MONDAY, APRIL 1st, 1889; 9–12 A. M.

Examiners, { REV. PROF. COUSSIRAT, B. A., B. D., OFF. D'ACAD
REV. PROF. WEIR, L.L.D.

I. Translate the following: (1) Job, Chap. I, vs. 18 and 19, (2) Job, Chap. IV, vs. 15, 16 and 17, (3) Job, Chap. XIV, vs. 13 and 14, (4) Ecclesiastes, Chap. I, vs. 13 and 14, (5) Ecclesiastes, Chap. III, v. 22, (6) Ecclesiastes, Chap. XII, vs. 13 and 14. (7) Jeremiah, Chap. I, vs. 13, 14 and 15.

II. Parse the following words from the above Extracts:

(1) מְדַבֵּר (2) וּבְנוֹתֶיךָ (3) בְּבֵית (4) וְיִשְׁתָּיִם (5) וַיִּגַּע (6) וַאֲמַלְטָה (7) לְהַגִּיד (8) אַבִּיר (9) יִתֵּן (10) יְבִיאֻנוּ (11) נָאֹם (12) גָּבַב:

III. Give (1) the absolute, and construct singular and plural of the noun in 3, (2) the force of 9 with מִי (3) the force of הָ— in 6.

IV. Give, (1) the plural absolute and construct of אֱלוֹהַּ; (2) the plural absolute and construct of דֶּרֶךְ attaching the personal pronouns to singular and plural.

V. Write out a Synopsis of (1) the Niphal of יָשַׁב (2) the Hiphil of נָגַשׁ (3) the Piel of שָׁלַח (4) the Hiphil of גָּלָה

VI. State the rules applying to the use of numerals in Hebrew.

VII. What does the participle denote when as a predicate it stands in the place of a finite verb?

VIII. Translate into Hebrew: (1) He is the God of our fathers. (2) Ye are his sons. (3) I have read the book of the law of God. (4) Lord, have mercy upon me.

IX. Point and translate the Masoretic note found at the end of the book of Ecclesiastes.

X. Reading in Hebrew.

THE NEIL STEWART PRIZE.

TRANSLATION AND ANALYSIS..

THURSDAY, APRIL 18TH 9—12 A. M.

Examiner....PROF. COUSSIRAT, B.A. ; B.D. ; OFFICIER D'ACADÉMIE.

1. Translate literally Genesis, chap. IX, vs 13 and 14.

2. Analyse (1) קַשְׁתִּי (2) בֶּעָנָן (3) בְּעַנְנִי

(*a*) What is the plural abs. state of עָנָן ?

(*b*) Give a Synopsis of נָתַן in Kal.

3. Translate Habakkuk, chap. I, v. 5 ; chap. II, vs. 2 and 3 ; chap. III, vs. 4 and 6. Give various readings.

4. Analyse (1) הַתַּמְּהוּ, (2) תַּאֲמִינוּ, (3) וַיָּפַח, (4) קַרְנַיִם (5) עֻזּוֹ, (6) הַרְרֵי.

5. Translate Psalms IV, vs. 2 and 9 ; and V, vs. 12 and 13.

6. Analyse (1) בְּקָרְאִי—What is the vowel under the כ ? (2) תּוֹשִׁיבֵנִי, (3) וְתָסֵךְ.

7. Write explanatory notes on (1) Gomer, (2) Ashkenaz, (3) Cush, (4) Mizraim, (5) Heth.

8. Comment on the superscriptions of Psalms III, IV and V.

9. Point and translate the Masoretic notes of Psalms III and IV.

10. Point out the characteristics of the style of Habakkuk.

THE NEIL STEWART PRIZE.

GESENIUS' GRAMMAR.

THURSDAY, APRIL 18TH 2-5 P. M.

Examiner.....PROF. COUSSIRAT B.A., B.D. ; OFFICIER D'ACADÉMIE.

1. In what cases are vowels unchangeable ?

2. Explain the forms of the following words : (1) יְצָתִי, (2) אֹמַר (3) מָלוֹ, (4) הַבִּי, (5) בּוֹא.

3. Give a Synopsis of (1) עָמַד in Niphal, (2) בָּרַךְ in Pual, (3) סָבַב in Kal, (4) קוּם in Polel, (5) בִּין in Kal.

4. What are the various endings of plural in masculine nouns ?

5. Decline מַלְכָּה (sing. and plural, one light and one grave suffixes.)

6. Give instances of paragogic letters.

7. Explain the construction of *pluralis excellentiæ*.

8. How does the Hebrew express the degrees of comparison?

9. What is the construction of passive verbs in Hebrew?

10. How do you express the Optative in Hebrew?

NATURAL SCIENCE.

FIRST YEAR,

CHEMISTRY.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiners..... { B. J. HARRINGTON, B.A., PH.D.
NEVIL N. EVANS, B.A.SC.

1. Explain by means of equations the chemical changes involved in the manufacture of Sulphuric Acid, and give the properties of the Acid.

2. Give three tests for the detection of Orthophosphoric Acid.

3. State what takes place in any two of the following cases:—(*a*) When Mercury is heated with Sulphuric Acid, (*b*) when Phosphorus is heated with strong solution of Caustic Potash, (*c*) when Arsenious Anhydride is heated with Charcoal.

4. State what you know with regard to the luminosity of flames.

5. Name the different allotropic forms of Carbon. What are their properties and uses?

6. What are the more important series of Hydrocarbons, and what their general formulæ?

7. What are ferments? What the products of Vinous and Acetous fermentation?

8. Explain the distinction between simple and compound Ethers, giving an example of each.

9. Carbohydrates. What are their general characters? Into what groups may they be divided?

10. What weight of Carbon will be required to convert 50 litres of Carbon Dioxide at 0° and 760 mm. into Carbon Monoxide, and what volume of the latter gas will be obtained?

INTERMEDIATE EXAMINATION.

BOTANY.

WEDNESDAY, APRIL 17TH:—9 TO 12 A.M.

Examiner,.....D. P. PENHALLOW, B.Sc.

1. Outline the general characteristics of the Thallophytes.

2. Show in what respects the Bryophytes are higher than the Thallophytes with reference to (1) structure and (2) mode of reproduction.

3. Give the general characteristics of the Pteridophytes, and explain the development of the reproductive phase of growth.

4. Point out the essential distinctions on which a separation of the Filicinæ, Equisetinæ and Lycopodinæ is based.

5. Explain the terms Polygamous, Monœcious, Diœcious, Hermaphrodite, and give examples.

6. Explain the structure and functions of the Spermatozoids in ferns, and show the functional equivalent in Angiosperms.

7. Show in what plants Polyembryomy occurs, and of what it is the result.

THIRD YEAR AND SECOND YEAR APPLIED SCIENCE.

ZOOLOGY.

MONDAY, APRIL 15TH:—2 TO 5 P.M.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. Define the class *Reptilia*, and state its leading sub-divisions. Give examples of each, recent and fossil.

2. How are *Crustacea* divided into sub-classes? Describe a typical example of the highest sub-class.

3. Describe fully any typical example of *Annelida* or of *Brachiopoda*.

4. What are the distinctive characters of the classes *Cephalopoda* and *Gastropoda*.

5. To what classes of animals do *Ostrea* and *Ascidia* belong? State their resemblances and differences.

6. Into what classes may the Echinodermata be divided? Describe one of them, and give a typical example.

7. State the difference between *Hydrozoa* and *Anthozoa*, and describe one of the fossil forms of either.

8. Define *Porifera*, and mention leading sub-divisions.

9. Describe the structures of any animal of the class *Rhizopoda*. State the distinctive characters of *Infusoria*.

10. Characterize fully either of the following classes: *Pisces*, *Arachnida*, *Ophiuridea*, *Ctenophora*, *Platyhelmintha*.

11. Refer to their Provinces and Classes the specimens exhibited, and state their distinctive characters.

B.A. ORDINARY EXAMINATION, AND THIRD YEAR APPLIED SCIENCE.

GEOLOGY AND MINERALOGY.

THURSDAY, APRIL 11TH:—AFTERNOON, 2 TO 5.

Examiners, { J. W. DAWSON, LL.D., F.R.S.; B. J. HARRINGTON, B.A., PH.D.

1. State the distribution of the Laurentian and Huronian rocks in North America, and mention their distinctive lithological characters.

2. Explain the peculiarities of the Calciferous and Potsdam, and of Chalk, and Nummulitic Limestones, with their geological relations and characteristic fossils.

3. How would you distinguish by fossils the Black River Limestone from the Helderberg on the one hand and the Acadian on the other.

4. State in order the Palæozoic rocks of the vicinity of Montreal, or the Upper Silurian Formations represented in Ontario, with their general geological distribution and most characteristic fossils.

5. Give some account of the Cretaceous and Laramie formations west of Manitoba, in comparison with European equivalents, or state the normal succession of deposits in the Pleistocene of Quebec, or the Carboniferous of Nova Scotia, with characteristic fossils.

6. State and explain the mode of proceeding with a Geological reconnaissance or survey.

7. Explain the methods employed in the determination of unknown mineral species.

8. Give the composition of the principal Ores of Iron. How would you distinguish them? State what you know with regard to their occurrence in Canada.

9. Explain the use of the microscope in the study of rocks.

10. Name the more important representatives of the Volcanic and Plutonic rocks, and describe one member of each group.

11. State what you know of the specimens exhibited.

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN APPLIED SCIENCE (*Chemistry Course*).

MINERALOGY.

TUESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiners, ...B. J. HARRINGTON, B.A., PH D.

1. What are symmetry planes and symmetry axes?

2. What is the character of the symmetry in the Isometric and Monoclinic Systems?

3. Give the characters of the Tetragonal System, explaining fully the notation of the faces.

4. Explain the notation of faces in the Triclinic System.

5. Explain the use of dense solutions in determining the specific gravity of minerals. What solutions are commonly employed?

6. Distinguish (*a*) between uniaxial and biaxial crystals, (*b*) between positive and negative crystals, (*c*) between contact and penetration twins.

7. Distinguish between Phosphorescence and Fluorescence, giving examples.

8. Certain Quartz crystals are said to be right-handed or left-handed. Explain the distinction.

9. What are the fundamental colours employed in describing minerals Discuss the causes producing difference of colour and lustre in minerals.

10. Distinguish between hexagonal pyramids of the first and second order, and for the latter show the truth of the expression $a : 2a : 2a : mc$.

11. Explain the following terms:—Geniculation, Parallel Grouping, Holohemihedrism, Polymorphism, Distortion.

12. Give a careful description of each of the specimens exhibited.

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN APPLIED SCIENCE (*Chemistry Course*).

DETERMINATIVE MINERALOGY.

THURSDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, B.A., Ph.D.

1. How can you readily ascertain whether a Silicate is decomposable by Hydrochloric Acid?

2. State what you know with regard to the action of Hydrochloric Acid upon Sphalerite, Limonite, Pyrolusite, Chrysolite, Stilbite.

3. How would the blowpipe enable you to distinguish between the following species :—Natrolite from Thomsonite, Calcite from Aragonite, Molybdenite from Graphite, Chalcocite from Tetrahedrite ?

4. State what you know with regard to the coatings produced when each of the following minerals is heated upon charcoal :—Arsenopyrite, Stibnite, Galena, Bismuthinite, Molybdenite.

5. Arrange the following species in the order of their hardness, beginning with the softest:—Tourmaline, Albite, Pyrolusite, Pyrite, Spinel,, Molybdenite, Siderite, Barite.

6. Give the blowpipe characters of Analcite, Rhodonite, Epidote Lazulite, Millerite.

7. What takes place on heating each of the following minerals in a closed tube :—Pyrite, Limonite, Fluorite, Cinnabar, Tetrahedrite.

8. Give tests for the detection of Boric and Phosphoric Acids in Silicates

9. Name the minerals constituting the Scale of Fusibility, and explain its use.

AFTERNOON, 2 TO 5.

Determination of minerals in the Laboratory.

B.A. HONOURS IN NATURAL SCIENCE AND B.A. Sc.
(Chemistry and Mining).

MINERALOGY.

TUESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiners, ... { SIR J. W. DAWSON, LL D., F.R.S.
B. J. HARRINGTON, B.A., Ph. D.

1. Deduce the atomic and quantivalent ratios and the formula of a mineral which gave on analysis the following composition :—

SiO_2 35.9, Al_2O_3 19.5, Fe_2O_3 1.3, FeO 39.8, Mn 0 2.3, CaO 1.20.

2. State what you know with regard to the methods of twinning in Rutile, Spinel, Orthoclase, Titanite, Staurolite.

3. What are the general characteristics of the Zeolites ? Name five members of the group, and give their distinctive characters.

4. Discuss the crystallographic and chemical relations of the Feldspars.

5. Describe Nepheline, Leucite and Chrysolite, stating what you know with regard to their occurrence in nature.

6. How would you distinguish Muscovite from Phlogopite, Epidote from Hornblende, Pyrolusite from Manganite, Rutile from Cassiterite, Millerite from Marcasite.

7. Give the composition, crystalline form and specific gravity of Pyrrhotite, Arsenopyrite, Vesuvianite, Andalusite and Tourmaline.

8. Charac'erize the Hexagonal system, explaining carefully the notation of the faces.

9. State what you know with regard to the composition and the origin of Pyromorphite, Malachite, Limonite, Kaolin and Anthracite.

10. Give the blowpipe characters of Proustite, Psilomelane, Siderite, Prehnite and Anglesite.

SPECIMENS:—AFTERNOON, 2 TO 4.

Name the minerals exhibited and give their characters as seen in the specimens.

B.A. HONOURS IN GEOLOGY AND NATURAL HISTORY AND B.A. Sc. (*Chemistry and Mining.*)

PRACTICAL GEOLOGY AND PALÆONTOLOGY.

TUESDAY, APRIL 9TH;—9 TO 12 A.M. AND 2 TO 5 P.M.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. What are the most important facts to be recorded in examining a Rock Section or Exposure?

2. Explain the methods of preparing Geological Maps, and the relations of maps to sections, general or special, with an example.

3. What are the methods of discovering and tracing Mineral Veins, and what irregularities may be expected in them, with their causes? Give Canadian examples.

4. What are the indications and principal varieties of Faults, and how are their character and effects to be ascertained.

5. In the case of the junction of igneous masses with beds, what facts are most important with reference to conclusions as to age?

6. Describe the principal modes of occurrence of Ores of Copper or Iron with Canadian examples.

7. Notice the parts which would be most important in describing or determining a Graptolite or a Crinoid, and illustrate by figures.

8. State in tabular form the characters of the families of Brachiopods, and their range in geological time.

9. What are the characteristic differences of Trilobites and Merostomata, and their range in time.

10. Describe the parts of a typical Rugose and Tab ılate Coral with their characteristic differences.

11. Indicate the relation of the orders of Fishes or Batrachians to geological time.

12. State what you know of *Astylospongia*, *Eocystites*, *Paradoxides*, *Orthoceras*, *Eozoon*, *Murchisonia*, *Dictyonema*, and their geological relations.

P. M. Examination in specimens of Fossils.

B.A. HONOURS IN GEOLOGY AND NATURAL HISTORY AND B.A. Sc. (*Chemistry and Mining.*)

CANADIAN GEOLOGY AND PALÆONTOLOGY. (*In Part.*)

WEDNESDAY, APRIL 17TH:—9 A.M. TO 12, AND 2 TO 5.

Examiners, ... { J. W DAWSON, LL D., F.R.S. / B. J. HARRINGTON, B.A., Ph.D.

1. Characterise the Laurentian rocks of Canada, with reference to their geographical distribution, mineral character, subdivisions, and the evidence as to fossils.

2. State the geographical distribution of the Huronian and Kewenian in Canada, New Brunswick and Newfoundland, with the views which may be held as to their geological equivalents elsewhere.

3. Describe the Palæozoic geology of the Province of Quebec on a line of section extending from the Laurentian axis through Montreal.

4. What formations in Canada would be indicated by the prevalence of the following genera: *Columnaria*, *Tetradium*, *Homalonotus*, *Olenellus*, *Pentamerus*, *Ptilodictya*, *Maclurea*, *Phyllograptus*, *Spirifer*, *Paradoxides*.

5. Describe the following formations, and state their geological position and best exposures in Canada, and some of their characteristic fossils:—Medina, Potsdam, Hudson River, Chazy, Niagara.

6. State the Cambrian succession in New Brunswick, and mention the corresponding formations in Quebec and in Newfoundland.

7. Give in a tabular form the series of Silurian rocks in Canada, with their European equivalents, distinguishing the Marginal and Plateau developments of each.

8. Describe shortly, or figure, any species of each of the following genera: *Zaphrentis*, *Dictyonema*, *Orthis*, *Pleurotomaria*, *Leperditia*, *Ophileta*, *Murchisonia*, *Favosites*, *Endoceras*, and state their geological relations in Canada.

9. Describe the rocks exposed in any important line of section across the Province of Ontario.

10. State what is known of the structure of the Rocky Mountains, and the mountain ranges of British Columbia.

EXAMINATION IN SPECIMENS, P.M.

Refer the specimens exhibited to their Geological formations, and to their places in the Zoological or Botanical classification.

B.A. HONOURS IN GEOLOGY AND NATURAL HISTORY AND B.A. Sc. (*Chemistry and Mining.*)

TUESDAY, APRIL 23RD:—9 A.M. TO 12, AND 2 TO 5.

FOURTH PAPER.

CANADIAN GEOLOGY AND PALÆONTOLOGY (*In Part*).

Examiners, { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Indicate the lithological and palæontological differences between the Erian rocks of Gaspé and New Brunswick and those of Ontario.

2. State the Carboniferous succession in Nova Scotia with a detailed account of the structure and fossils of one of the subdivisions.

3. State what you know of mountain elevation and igneous ejection in Canada, in the Permian, Triassic and Cainozoic Periods.

4. State what you know of the most important deposits of coal in the Cretaceous and Laramie of Western Canada.

5. What are the characters and the geological range in Canada of the following genera:—*Baculites, Bathygnathus, Calamites, Buccinum, Phillipsia, Pupa, Aviculopecten, Monotis.*

6. Make a general section from the Rocky Mountains to the Laurentian North of Lake Superior. Explain the distribution of superficial deposits on the line of section.

7. Describe the Canadian Pleistocene with its subdivisions, climatic conditions and characteristic fossils.

8. What are the relations of the Carboniferous and Trias in Nova Scotia Describe the latter system, stating its mineral character and distribution.

9. Tabulate the Western Cretaceous, and describe its geographical distribution and mention its characteristic fossils.

10. Inwhat, formations would the following genera of plants be expected to occur:—*Walchia, Lepidophloios, Sequoia, Archæopteris, Psilophyten, Platanus, Populus.* Characterize one of these genera.

EXAMINATION IN SPECIMENS, P.M.

Refer the specimens exhibited to their Geological formations, and to their places in the Zoological or Botanical classification.

B.A. HONOURS IN NATURAL SCIENCE AND B.A Sc. (*Chemistry and Mining.*)

PETROGRAPHY.

THURSDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiners, ... { SIR J. W. DAWSON, LL.D., F.R.S. / B. J. HARRINGTON, B.A., PH.D.

1. Give the optical characters of Monoclinic and Orthorhombic minerals as observed with the polarization microscope.

2. Show by means of diagrams the relations of the crystallographic and optic axes in Epidote and Pyroxene.

3. How would you distinguish the following minerals in rock-sections by means of the microscope:—(*a*) Pyrite from Magnetite, (*b*) Titanite from Augite, (*c*) Hauyne from Leucite, (*d*) Microcline from Orthoclase?

4. Biotite and Muscovite are both present in a rock-section. How would you distinguish them?

5. What are the most frequent accessory minerals, (*a*) in Granite, (*b*) in Mica Schist, (*c*) in Laurentian Limestones?

6. State what you know with regard to the macroscopic and microscopic characters of Tachylite, Obsidian and Pitchstone.

7. What minerals are known to occur in the Nepheline Syenites of Montreal?

8. Give the mineral constituents and geological relations of the Andesites and Norites.

9. State what you know with regard to the origin of Travertin, Argillite, Pumice, Chalk, Loss.

10. Explain the terms neo-volcanic, axiolitic, fluidal, granitoid, anisotropic.

Determination of rocks, Afternoon,—2 to 4.

FACULTY OF APPLIED SCIENCE.

FACULTY OF APPLIED SCIENCE.

JUNIOR MATRICULATION.

MATHEMATICS.

TUESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.

Examiner, ...G. H. CHANDLER, M.A.

1. A man sells an article for $164, thereby losing 20 per cent. of its cost; what was the cost?

2. A cubical vessel, of which each edge is 3 feet, is filled with water, from which 10 gallons are drawn; what is the resulting depth of water, a gallon of water weighing 10 lbs. and a cubic foot 1000 oz.?

3. Find the greatest common measure of

$x^4 + 6x^3 + 11x^2 + 4x - 4$ and $x^4 + 2x^3 - 5x^2 - 12x - 4$.

4. Simplify the following expressions:

$$\frac{x+y}{y} - \frac{2x}{x+y} + \frac{x^2y - x^3}{x^2y - y^3}, \qquad \frac{\frac{1}{1+x} + \frac{x}{1-x}}{\frac{1}{1-x} \quad \frac{x}{1+x}}$$

5. Solve the equations

$$\frac{6x+13}{15} - \frac{3x+5}{5(x-5)} = \frac{2x}{5},$$

$$\left.\begin{aligned} ax - by &= a^2 \\ bx - ay &= b^2 \end{aligned}\right\}$$

6. If the circumference of the hind-wheel of a carriage is 12 feet and that of the fore-wheel is 9 feet, what is the distance travelled when the latter has made 1000 revolutions more than the former?

7. The complements of a parallelogram about the diameter of any parallelogram are equal.

8. In any right-angled triangle the square on the side opposite the right angle is equal to the squares on the sides containing the right angle.

9. In any obtuse-angled triangle the square on the side subtending the obtuse angle exceeds the squares on the sides containing the obtuse angle by twice the rectangle contained by either of these sides

and the straight line intercepted between the obtuse angle and the foot of the perpendicular let fall on that side from the opposite angle.

10. The opposite angles of a quadrilateral inscribed in a circle are equal to two right angles.

SENIOR MATRICULATION.

MATHEMATICS (*First Paper*)

TUESDAY, SEPT. 18TH;—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A

1. An article purchased for £84 7*s*. was sold for £90 14*s*. 0¾*d*., what was the gain per cent.?

2. The circumference of the fore-wheel of a carrirge is 8½ feet, that of the hind-wheel 10½ feet; what is the distance travelled when the former has made 1000 revolutions more than the latter? (By Arithmetic).

3. Reduce the fraction $\frac{x^4 + a^2 x^2 + a^4}{x^4 + ax^3 - a^3x - a^4}$ to its lowest terms.

4. Multiply $x^{-\frac{3}{2}} + 2x^{-\frac{3}{4}} y^{\frac{1}{2}} + 3y$ by $x^{-\frac{3}{2}} - 2x^{-\frac{3}{4}} y^{\frac{1}{2}} + y$.

5. Solve the equations:

$$\frac{x+4}{3} - \frac{7-x}{3} = \frac{4x+7}{9} - 1,$$

$$\left.\begin{aligned} 3xy + 2x + y &= 485 \\ 3x &= 2y \end{aligned}\right\}$$

6. The angles between the tangent to a circle and a chord through the point of contact are equal to the angles in the alternate segments of the circle.

7. Describe a circle about a regular pentagon.

8. The line which bisects the vertical angle of a triangle cuts the base into segments which have the same ratio as that of the sides of the triangle.

9. If four straight lines be proportionals, the similar rectilineal figures similarly described on them shall be proportional.

10. If a straight line be perpendicular to two straight lines at thier point of intersection, it shall be perpendicular to the plane containing those lines.

SENIOR MATRICULATION.

MATHEMATICS. (*Second Paper.*)

TUESDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiner,.....G. H. CHANDLER, M.A.

1. Compare the trignometrical ratios of an angle and its supplement.

2. Show that

(1) $\tan^2 A + \cot^2 A = \sec^2 A \operatorname{cosec}^2 A - 2$.

(2) $\cos(A - B) = \cos A \cos B + \sin A \sin B$,

(3) $\tan 75^\circ = 2 + \sqrt{3}$

(4) $\operatorname{cosec} 2A + \cot 2A = \cot A$.

3. In any triangle,

(1) $$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

(2) $$\cos\frac{A+B}{2} = \sin\frac{C}{2}$$

4. Solve by logarithms the triangles in which

(1) $a = 109$, $b = 61$, $c = 66^\circ\ 59'\ 25''$,

(2) $a = 565$, $b = 445$, $c = 606$.

5. At a horizontal distance of 200 yards from the foot of a tower, the angle of elevation of the top of the tower is 30°, and that of a flag-staff on the top of the tower 32°. Find the height of the tower and the flag-staff.

THIRD YEAR SCOTT EXHIBITION.

MATHEMATICS.

TUESDAY, SEPT. 18TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Represent correctly the positions of the lines $2x + 3y = 5$, and $x - 2y = 1$.

2. State and prove the formula for the area of a triangle in terms of the coordinates of the angular points.

3. Find the equations of the tangents to the ellipse $x^2 + 3y^2 = 3$, which make an angle of 45° with the major axis.

4. Find the condition that the line $\frac{x}{m} + \frac{y}{n} = 1$ should touch the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = .$

5. Shew that the focal radii of any point on a hyperbola are equally inclined to the tangent.

6. Find the locus of a point, the square of whose distance from a given point is proportional to its distance from a given line.

7. Show that $\tan^{-1}x = x - \frac{x^3}{3} + \frac{x^5}{5} -$ &c.

8. Find how a given right circular cone may be cut so as to give the parabola of greatest area.

9. Differentiate $\log \tan \left(45° + \frac{x}{2}\right)$ and $\sin^{-1}\left(\frac{x^2-1}{x^2+1}\right)$

10. Integrate $\frac{xdx}{1+x^4}$ and $\frac{2\ dx}{x\sqrt{3x^2-5}}$.

11. Find the area included between the curves $y^2 = 2x$ and $x^2 = 2y$.

THIRD YEAR.

SCOTT EXHIBITION.

Macaulay, vol. I., Cap. I., Scott, *Lady of the Lake.*

WEDNESDAY, SEPTEMBER 19TH:—MORNING 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / PAUL T. LAFLEUR, M.A.

1. Give the outline of what is said concerning

(*a*) The Normans.

(*b*) The prerogatives of the early English Kings and their limitations

(*c*) The domination and character of Cromwell's army.

2. How does Macaulay maintain these statements:

(*a*) During the thirteenth century we must seek for the origin of our freedom, our prosperity, and our glory.

(*b*) The precedents of the Middle Ages are still valid precedents. (One example is given.)

3. Indicate the character of Land.

4. Narrate the events related in the Canto, entitled "The Chase," and reproduce the description of Ellen's home by quoting the text.

5. State the part played in the poem by Douglas.

6. Distinguish between the historical portion of the poem and the fictitious events introduced by the author.

7. Make brief explanatory notes on :—Taghairin, Donne, Coir-Uriskin, Lufra, Caitiff, Jeopardy, Tuschel, Snowdown.

8. What, from your reading, seem to you the special characteristics of Scott's poetry?

THIRD YEAR.

SCOTT EXHIBITION.

MECHANISH.

THURSDAY, SEPTEMBER 20TH, 1888. MORNING, 9 to 12.

Examiner,... .....C. H. MCLEOD, MA. E.

1. Determine the ratio between the *angular* velocities of a crank and its connecting rod, at any instant. (*a*) When is the velocity of the cross-head end of the rod at a maximum? Why?

2. Show how Whitworth applied the crank and slotted lever to obtain a quick return in his shaping machine. (*a*) Obtain the velocity ratio for the crank and lever and show how to represent this graphically.

3. Show that the Peaucellier cell may be applied to obtain a straight line motion.

4. In an epicyclic train of three equal bevil wheels, the first and last wheels are on the same axis. The first wheel turns twice per second and the arm turns once in three seconds in a direction opposite to the first wheel. How many turns per second does the last wheel make? (*a*) How would you drive the arm of this train, and arrange for a variable velocity in the last wheel?

5. Show that a pair of equal ellipses may be made to work in rolling contact.

6. Sketch and explain three methods of reversal suitable to a plainer.

BRITISH ASSOCIATION EXHIBITION.

MATHEMATICS.

TUESDAY, SEPTEMBER 18th :—MORNING, 9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. The equations of three circles are $x^2 + y^2 = 3$, $x^2 + y^2 - 6x - 10y + 25 = 0$, $x^2 + y^2 - 4(4x + y) + 33 = 0$; show that the lines which join their centres form a right-angled triangle.

2. A normal is drawn through the extremity of the latus rectum of the parabola $y^2 = 2mx$. How much of it lies inside the curve?

3. The base of a parabolic area is perpendicular to the axis of the curve. It is required to bisect the area by a line parallel to the base.

4. A straight line of given length moves with its extremities on given lines at right angles to one another; show that any point in the line describes an ellipse.

5. Find the radius of curvature of the curve $y = x^2 - x^4$ at the origin. Find also the position of the point of inflexion on this curve.

6. Determine the least isosceles triangle that can be described about a given ellipse, the base of the triangle being parallel to the major axis of the ellipse.

7. Show that the whole area of the curve $a^4 y^2 = x^4 (a^2 - x^2)$ ist $\frac{1}{4} \pi a^2$.

8. Find the centre of gravity of an area bounded by the curve $a y^2 = x^3$ and a double ordinate of length $2a$.

9. Find the centre of pressure of a triangle having its base horizontal and vertex in surface of the liquid.

10. A body is whirled round by a string in a vertical circle; show that the tension of string at the lowest point must be at least 6 times the weight of the body.

SCIENCE SCHOLARSHIPS.

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. State and explain the Law of Ampère.

2. Acetic Acid and Methyl Formate. Explain by means of rational formulæ the supposed difference in their constitution.

3. Name the more important Vegetable Acids, and describe the preparation of one of them.

4. How is Chloroform prepared?

5. A piece of metallic Zinc is immersed in a solution of Lead Acetate. What takes place? Give the equation.

6. How is Potassium Permanganate prepared, and what are its properties?

7. What takes place when Ammonia-water is added to a solution of Aluminium Sulphate? Give the equation.

8. State what you know with regard to Chromium and its compounds.

9. How may the cleansing action of soap be explained?

10. Explain carefully each of the following equations:—

$$SnO_2 + 2KCy = Sn + 2\,KCyO$$

$$Ca_3P_2O_8 + 2H_2SO_4 = H_4CaP_2O_8 + 2CaSO_4$$

FIRST YEAR.

GEOMETRY.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Describe a square which shall be equal to a given rectilinear figure.

2. Describe a circle about a given triangle.

3. If four magnitudes are proportional, they shall also be proportional when taken by composition.

4. If two triangles have one angle of the one equal to one angle of the other, and the sides containing the equal angles proportional, the triangles shall be equiangular to one another.

5. Parallelograms which are equiangular have to one another the ratio which is compounded of the ratio of their sides.

6. The rectangle contained by the sides of a triangle is equal to the rectangle contained by the diameter of the circumscribed circle and the perpendicular from the vertex on the base.

7. How many kinds of conic sections are there, and how may they be obtained from the cone?

8. The sum of the focal distances of any point on an ellipse is constant.

9. Prove that the latus rectum of a parabola is twice the perpendicular from the focus on the directrix.

10. If QV is the ordinate to the diameter PV which passes through the point P on a parabola, show that $QV^2 = 4\,FP.PV$, where F is the focus.

FIRST YEAR.

TRIGONOMETRY (FIRST PAPER)—ALGEBRA.

SATURDAY, APRIL 13th :—MORNING, 9 to 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Find the trigonometrical ratios of $180°-A$ and of $180° + A$ in terms of those of A.

2. Write down the values of sin 30°, sin 60°, cos 120°, sin 135°, sin 225°, tan 240°, tan 300°, sec 315°.

3. Prove that

(*a*) $\cot^2 A - \cos^2 A = \cos^4 A \operatorname{cosec}^2 A$

(*b*) $(\operatorname{cosec} A - \cot A)^2 = \dfrac{1-\cos A}{1+\cos A} = \tan^2 \dfrac{A}{2}$,

(*c*) $(\sec A + \tan A)^2 = \dfrac{1+\sin A}{1-\sin A} = \tan^2\left(45° + \dfrac{A}{2}\right)$

(*d*) $\sin(A-B) = \sin A \cos B - \cos A \sin B$,

(*e*) $\dfrac{\tan A - \tan B}{\tan A + \tan B} = \dfrac{\sin(A-B)}{\sin(A+B)}$

(*f*) $\dfrac{\cos A - \cos B}{\cos A + \cos B} = -\tan\left(\dfrac{A+B}{2}\right)\tan\left(\dfrac{A-B}{2}\right)$

4. Resolve into factors $x^2 + 16x - 260$, $15x^2 - 77x + 10$, $4 - 5x - 6x^2$, $16a^4 - 81b^4$, $a^2 - y^2 - 2yz - z^2$.

5. Find the G.C.M. of $3x^3 - 22x - 15$ and $5x^4 + x^3 - 54x^2 + 18x$.

6. Show that $\sqrt[3]{72} - 3\sqrt[3]{\frac{1}{3}} + 6\sqrt[3]{21\frac{1}{3}} = 9\sqrt[3]{9}$.

7. Solve the equations

(*a*) $\sqrt{x^2 + bx} = 1 + x$,

(*b*) $\dfrac{14x^2+16}{21} - \dfrac{2x^2+18}{8x^2-11} = \dfrac{2}{3}x^2$,

(*c*) $\dfrac{5}{x-2} - \dfrac{4}{x} = \dfrac{3}{x+6}$,

(*d*) $\begin{cases} x - 2y + 3z = 2 \\ 2x - 3y + z = 1 \\ 3x - y + 2z = 9 \end{cases}$

(*e*) $\begin{cases} 5x + y = 3 \\ 2x^2 - 3xy - y^2 = 1 \end{cases}$

FIRST YEAR.

TRIGONOMETRY (SECOND PAPER).

SATURDAY, APRIL 20th :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. In any triangle

(*a*) $\tan\left(\frac{A-B}{2}\right) = \left(\frac{a-b}{a+b}\right)\cot\frac{C}{2}$,

(*b*) $\cot\frac{A}{2}\cot\frac{B}{2} = \frac{a+b+c}{a+b-c}$.

2. In the triangles in which

(1) $a = 468.2137$, $b = 331.297$, $c = 258.9733$,

(2) $a = .56794$, $b = .56318$, $C = 44° 59' 6''.2$,

(3) $a = 391.54$, $b = 393.75$, $A = 64° 46' 15''.4$,

Show that

(1) $A = 104° 18' 19''.4$, $B = 43° 17' 8''.4$, $C = 32° 24' 32''.2$,

(2) $A = 68° 5' 23''.3$, $B = 66° 55' 30''.5$, $c = .432748$,

(3) $B = 65° 27' 58''.6$ or $104° 32' 1''.4$, $C = 49° 45' 46''$ or $0° 41' 43''.2$, $c = 330.41$ or 5.2525.

3. The angle of elevation of a tower 100 feet high due north of an observer is 50° ; show that it becomes 17° 47′ 50″ when he has walked due east 300 feet.

4. Find a formula for the distance of the visible sea horizon in terms of the altitude of the point of observation.

SECOND YEAR.

ANALYTIC GEOMETRY.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. The angular points of a triangle are (—1, —3), (3, —2), (2, 1), find (*a*) the area, (*b*) the lengths of the sides, (*c*) the equation and length of the perpendicular from the first point on the opposite side, and (*d*) the angle opposite this side.

2. Show that the equation $4xy - 3x^2 = a^2$ becomes $x^2 - 4y^2 = a^2$ when the axes are turned through an angle of which the tangent is 2.

3. Find the equation of the circle described about the triangle of question 1.

4. Find the equations of the tangent and normal at the origin of $x^2 + y^2 = 3x + 2y$.

5. Show that the locus of a point, the square of whose distance from a given point is proportional to its distance from a given line, is a circle.

6. Find the latus rectum of the ellipse, and show that it is a third proportional to the major and minor axes.

7. Prove that the tangent to the ellipse makes equal angles with the focal distances of the point of contact, and draw a figure representing the corresponding property of the hyperbola.

8. What are the curves $3x^2 + 4y^2 = 48$, and $9x - 2y^2 = 0$, and where do they intersect?

SECOND YEAR.

CALCULUS.

SATURDAY, APRIL 13th:—MORNING, 9 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. Show that

$$(a)\ d\sqrt{\frac{a+x}{a-x}} = \frac{a\,dx}{(a-x)\sqrt{a^2-x^2}},$$

$$(b)\ d\sin^{-1}\left(\frac{x}{\sqrt{1+x^2}}\right) = \frac{dx}{1+x^2},$$

$$(c)\ d\log(\tan x + \sec x) = \sec x\,dx.$$

2. If $y = \tan x$, prove that

$$(a)\ d^2y = 2\sec^2 x \tan x\,dx^2,$$

$$(b)\ d^3y = (6\sec^4 x - 4\sec^2 x)\,dx^3.$$

3. Show that $\tan x = x + \frac{1}{3}x^3 + \ldots$.

4. Prove that the subtangent and subnormal at the point (a, a) on the curve $y^2(2a - x) = x^3$ are $\frac{1}{2}a$ and $2a$ respectively.

5. Determine the maximum cylinder that can be cut from a given cone.

6. Integrate $(a)\ \frac{2\,dx}{\sqrt{1-4x^2}}$, $(b)\ \frac{x^3\,dx}{1+x^4}$, $(c)\ \frac{x\,dx}{1+x^4}$

$(d)\ \frac{dx}{\sqrt{1+4x^2}}$, $(e)\ \sin^2 x \cos^3 x\,dx$.

7. Show that $\int\frac{(x^2-4x+3)\,dx}{x^3-6x^2+9x} = \frac{1}{3}\log x(x-3)^2$.

8. Find the area included between the curve $y^2(a^2 - x^2) = a^4$ and its asymptotes.

9. Show that the volume of a prolate spheroid $= \frac{4}{3}\pi a b^2$.

SECOND YEAR.

MECHANICS.

SATURDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. A body falls freely from rest through 160 feet; how long will it take to fall through the next 80 feet?

2. A weight of 8 lbs. is placed on a smooth horizontal table, and is attached by a string to a weight of 12 lbs. hanging over the table; find the velocity generated in one second, and the tension of the string.

3. A rod of uniform section and density weighs 10 lbs.; a weight of 10 lbs. is tied to one end of it, and one of 20 lbs. to the other; show that the rod will balance on a fulcrum which divides it in the ratio 3:5.

4. A body rests on an inclined plane and is supported by a force which makes a given angle with the plane; find this force and the pressure on the plane.

5. A rough plane is inclined at 30° to the horizon; a weight W is placed on it, and it is found that a force $\frac{3}{4}$ W acting parallel to the plane will just move the weight up the plane; show that the co-efficient of friction $= \frac{1}{6}\sqrt{3}$.

6. Find the amount of work lost by friction when an axle rests on friction wheels.

7. A square is divided into four equal triangles by drawing its diagonals which intersect in O, and one triangle is removed; show that O G $= \frac{1}{9}$ of a side of the square, G being the centre of gravity of the remaining part of the figure.

8. Show that the total pressure on the internal surface of a sphere when filled with water is 3 times the weight of the water.

9. Explain the general method of finding centres of pressure, and apply it to find the centre of pressure of a triangle having one side in the surface of the liquid.

10. A diamond ring weighs 65 grs. in air, and 60 grs. in water; find the weight of the diamond, the specific gravity of gold being 17.5 and that of the diamond 3.5

THIRD YEAR.

SPHERICAL TRIGONOMETRY AND ASTRONOMY.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. If S = half the sum of the angles of a spherical triangle, show that cos S is always negative and cos $(S-A)$ always positive.

2. In any right angled spherical triangle $\cos c = \cos a \cos b = \cot A \cot B$.

3. State and prove any one of Napier's four Analogies.

4. Define right ascension, declination, parallax, and any three other terms used in Spherical Astronomy.

5. Find the mean time when λ Draconis (Nautical Almanac, p. 339) will be at its greatest western elongation here to-day.

6. How may the chronometer error be found by observing a celestial object when it has equal altitudes east and west of the meridian? In the case of the sun, find and explain the use of the formula which must be used to correct the observations.

7. The altitude of the pole star is observed at $15h.\ 40m.$ sidereal time to-day to be $42°\ 16'\ 23''$; what is the latitude of the place of observation?

8. The culmination of the star 85 Geminorum is observed at $7h.\ 49m.\ 11s.$ sidereal time to-day; that of the moon's bright limb at $8h.\ 36m.\ 22s.$; calculate the longitude of the place of observation.

THIRD YEAR.

MECHANICS.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Explain the method of finding the specific gravity of a body that will not sink in water.

A piece of wood weighs 4 lbs. in air, and a piece of lead weighs 4 lbs. in water; the lead and wood together weigh 3 lbs. in water, what is the specific gravity of the wood?

2. Describe, and explain the working of, a gas pressure gauge that floats in water.

3. A cylindrical diving bell of height a is sunk in water till it becomes half full. Show that the depth from the surface of the water to the top of the bell is $\frac{h-a}{2}$, where h is the height of the water barometer.

4. A cubic foot of air at a temperature of 100° *F.*, and under a pressure of $29\frac{1}{2}$ inches of mercury, is cooled down to 40° *F.* and compressed by an additional $10\frac{1}{2}$ inches of mercury; show that the volume becomes 1138 cub. in. nearly.

5. A thin bottle filled with air is placed under the receiver of an air-pump, and when the barometer gauge stands at 21 inches the bottle bursts, whereby the mercury falls to 17 inches; prove that the volume of the recever $= \frac{2}{7}$ of the volume of the bottle.

6. Explain the method of calculating the velocity of efflux of liquids and gases from small orifices.

7. Find the force which must act at right angles to the direction of motion of a body in order that the body may move in a circle.

8. A body is thrown upward with a velocity of 96 feet per second; after how many seconds will it be moving downward with a velocity of 40 feet per second?

9. A weight P, descending vertically, draws another weight W up an inclined plane whose angle of elevation is $30°$; determine the velocity of P after n seconds have elapsed.

THIRD YEAR.

MATHEMATICS (ADVANCED).

SATURDAY, APRIL 20TH;—MORNING 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Parallelograms formed by tangents to a given ellipse at the extremities of conjugate diameters are of constant area.

2. The radius of curvature at any point of an ellipse $= b_1^3 \div ab$, where b_1 is the semi-diameter conjugate to that through the point.

3. Given $(x + y)^3 \tan^2 z = (x - y)^3$, show that $x \frac{dz}{dx} + y \frac{dz}{dy} = 0$.

4. Find the positions of the four cusps of the curve $x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}}$.

5. Show that $r(1 + \cos\theta) = m$ is the polar equation of a parabola referred to the focus and axis, and hence show that $p^2 = \frac{1}{2} mr$, where p is the perpendicular from the focus on the tangent.

6. Show that

(1) $$\int \frac{dx}{x^3\sqrt{x^2 - a^2}} = \frac{\sqrt{x^2 - a^2}}{2a^2x^2} + \frac{1}{2a^3}\sec^{-1}\frac{x}{a},$$

(2) $$\int \frac{dx}{(1 + x^2)^2} = \frac{x}{2(1 + x^2)} + \tfrac{1}{2}\tan^{-1}x,$$

(3) $$\int \sqrt{a^2 + x^2}\, dx = \tfrac{1}{2} x\sqrt{a^2 + x^2} + \tfrac{1}{2} a^2 \log (x + \sqrt{a^2 + x^2})$$

7. Prove by integration, or otherwise, that

$$\sin^{-1}x = x + \frac{x^3}{2.3} + \frac{3\ x^5}{2.4.5} + \frac{3.5x^7}{2.4.6.7} + \ldots\ldots$$

8. Show that the total length of the curve of question 4 is $6a$.

9. Find the velocity which would be acquired by a body in falling from an infinite distance to the surface of the earth, neglecting the resistance of the atmosphere.

10. Find the equation of the tangent plane at the point (2,1,3) on the surface $2x^2 + y^2 - 3z = 0$.

B.A. Sc. EXAMINATION.

SPHERICAL ASTRONOMY.

SATURDAY, MARCH 2ND:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Describe the different systems of spherical co-ordinates which are used in Astronomy.

2. Find the formulæ for determining the hour angle, azimuth and zenith distance of a given star at its greatest elongation at a given place.

3. Find, by interpolation to third differences, the right ascension of the moon at 1 h. 30 m. Montreal mean time to-day.

4. Show that the length of the normal terminating in the axis of the terrestrial spheroid is, for the latitude ϕ,

$$\frac{a}{\sqrt{1 - e^2 \sin^2 \phi}}.$$

5. If S and π are respectively the semi-diameter and horizontal parallax of the moon, a' and a the radii of the moon and earth, show that

$$\sin S = \frac{a'}{a} \sin \pi$$

6. Explain the method of obtaining time by a single altitude. How would you find the effect of small errors in the altitude, declination, and latitude upon the time found by a single altitude?

7. If several altitudes of the same star be taken when it is near the meridian, explain the reductions required in order to make use of the observations for the purpose of finding the latitude of the place of observation.

8. Investigate the formula for obtaining latitude by means of the pole star, viz.:

$$\phi = h - p \cos t + \tfrac{1}{2} p^2 \sin 1'' \sin^2 t \tan h.$$

9. Explain fully the method of determining longitude by the electric telegraph. How may the transmission time be found?

10. Find, by the hourly ephemeris of the moon, the longitude of a place where the moon's centre culminates at 23 h. 45 m. local sidereal time to-day.

11. Explain the method of obtaining the direction of the meridian by means of the altitude of a terrestrial object and its angular distance from the sun at a given time.

12. State the problem to be solved by the method of least squares. Define "equations of condition" and "normal equations," and explain how the latter are obtained from the former.

SECOND AND THIRD YEARS.

ENGLISH COMPOSITION.

THURSDAY, APRIL 4TH: 'AFTERNOON, 2 TO 5.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Punctuate carefully the following passage:—

The furniture of this caravansera consisted of a large iron pot two oaken tables two benches two chairs and a potheen noggin there was a loft above attainable by a ladder upon which the inmates slept and the space below was divided by a hurdle into two apartments the one for their cow and pig the other for themselves and their guests on entering the house we discovered the family eleven in number at dinner the father sitting at the top the mother at bottom the children on each side of a large oaken board which was scooped out in the middle like a trough to receive the contents of their pot of potatoes little holes were cut at equal distances to contain salt and a bowl of milk stood on the table all the luxuries of meat and beer bread knives and dishes were dispensed with.

2, Make corrections in the following:—

(*a*) These orders being illegal, they are generally communicated verbally.

(*b*) Books that we can at a glance carry off all that is in them are useless for discipline.

(*c*) A church whose creeds are determined, its chief officers appointed its discipline administered, and its revenue secured by the state.

d. Vested with a dignity which humanity has never possessed in any other person, this aggravation in his case was unparalleled.

e. Provision is made for happiness of a quite different nature than can be said to be made for misery.

f. Who are the ministers of the crown are the accidents of history.

g. A quiet boy, whom I firmly believe never did wrong in word thought or action.

h. He refused to follow his leader on a fraudulent pretext.

3. (*For Third Year only.*) Write the rules for the construction of a correct paragraph, and illustrate them in a paragraph of your own from the answer to question (4).

4. Write an essay of not less than three pages on any one of the following subjects:—

a. Imperial Federation.

b. Technical Workshops.

c. International Exhibitions.

FIRST YEAR.

ENGLISH COMPOSITION.

FRIDAY, APRIL 5TH:—MORNING, 9 TO 11.

Examiners,..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. What mistakes are often made in the use of the following words: female, climax, aggravate, calculated, discount, balance, limited, mutual, verbal? Illustrate the misuse of each one in sentences of your own construction.

2. Correct the following:—

(*a*) He saw his partner, and told him that his correspondent refused to comply with his request and blamed him for his mismanagement.

(*b*) They soon left the men by themselves who had come to their assistance.

(*c*) His reign was like the course of a brilliant meteor which shoots over the heavens, which sheds a portentous light, which is instantly swallowed up in darkness.

(*d*) Raising the fallen hero, it was found that he was dead.

(*e*) This custom always has and will exist.

(*f*) The officials are polite, and travelling generally comfortable.

3. Write an essay of not less than two pages on any one of the following subjects:—

(*a*) Ambition.

(*b*) Canadian Industries (*any one*).

(*c*) Your favourite pastime.

B.A. Sc. AND THIRD YEAR EXAMINATIONS.

THEORY OF STRUCTURES. (*Paper* 1.)

MONDAY, APRIL 1ST, 1889 :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY.

1. If any number of forces act in one plane, shew that their B.M. with respect to a given point may be represented by the intercept between the first and last sides of the funicular polygon of the line drawn through the given point parallel to the resultant of the forces.

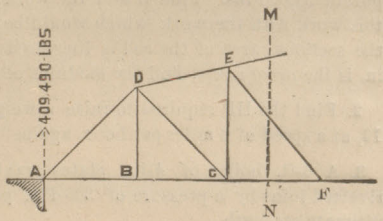
A truss of 240 ft.-span and 10 panels has loads of 25, 20, 24, 22, 18, 18, 18, 18-tons, concentrated at the panel points. Find by *scale measurement* the bending moments at the four panel points which are the most heavily loaded, and determine whether these are the greatest bending moments to which the truss is subjected as the weights move over the truss at the panel distances apart.

2. A pair of shear legs, each 35 ft. long, with the point of suspension 25-ft. vertically above the ground surface, is supported by a tie 100 ft. long. Find the thrusts along the legs and the tension in the tie when a weight of 2-tons is being lifted ; distance between feet of legs = 15-ft.

Also find the max. compressive intensity of stress to which the material of the leg is subjected.

What should be the diameter of the legs, if they are round spars, and if the working stress is not to exceed 400-lbs. per sq.-in. ?

3. The Fig. is a portion of one of the Sault Ste. Marie bridge-trusses cut off by the plane M N and supported upon the abutment at A. The reaction at A = 409,490-lbs., the weight at B = 49,500-lbs., the weight at C = 38,700-lbs , the height BD = 24-ft., the height CE = 29½-ft.; AB = BC = CF 24-ft. ; find the magnitudes and characters of the stresses in the members met by MN.



4. The rafters AB, AC of a factory roof are 18-ft. and 24-ft. in length, respectively. The ties BE, EC are horizontal, and the length BC is 30-ft. The middle points of the rafters are supported by the struts GE HF, at right angles to the rafters, AE being a tie. The truss carries a load of 500-lbs. at each of the points G, A. H. Find, *graphically*, the stresses in all the members.

Shew by dotted lines the modification in the stress diagram which will result from a normal load of 300-lbs. per lineal ft. on the rafter AB, assuming that the end C rests upon rollers.

5. Construct *funicular* polygons for the two cases of the preceding example.

6. ABCD is a quadrilateral truss, AB and CD being horizontal and 30 and 15-ft. in length respectively. The length of AC is 10-ft., and its inclination to the vertical is 60°. A weight W_1 is placed at C, and W_2 at D. What must be the relation between W_1 and W_2, so that the truss may not be deformed? For any other relation between W_1 and W_2, explain how you would modify the truss, to prevent deformation, and find the stresses in all the members.

7. A Warren girder 80-ft. long is formed of *five* equilateral triangles. Weights of 2, 3, 4, 5-tons are respectively concentrated at the 1st, 2nd, 3rd and 4th-apex along the upper chord, determine the stresses in all the members of the girder.

B.A. Sc. AND THIRD YEAR EXAMINATIONS.

THEORY OF STRUCTURES. (*Paper II.*)

WEDNESDAY, APRIL 3RD, 1889:—MORNING, 9 A.M.

Examiner,..... .....HENRY T. BOVEY, M.A., M. INST. C.E.

1. A bar 1-in. in sectional area and 10-ft. long, stretches .01-ft. under a pull of 25,000-lbs. Find E and the work stored up in the rod. Compare this work with the work which would be stored up if for half its length the sectional area of the rod is increased to 4-ins. If 25,000 lbs. per sq.-in. is the *proof stress*, find the modulus of resilience.

2. Find the HP required to raise a weight of 10-tons up a grade of 1-in 12, at a speed of 6 miles per hour, against a resistance of 9-lb. per ton.

3. A 6-ft. boiler of $\frac{1}{2}$-in. plates was burst at a longitudinal double-rivetted joint by a pressure of 300-lbs. per sq.-in., find the coefficient of ultimate strength.

4. Discuss the influence of "fluctuation of stress" upon the ultimate strength of a material.

The stress in the diagonal of a steel bowstring girder fluctuates from a tension of 15.15 tons to a compression of 7.65 tons; find its sectional area, 3 being a factor of safety and 40-tons the statical breaking strength per sq.-in.

5. Prove the relations

$$M = \frac{E}{R} I = \frac{f}{c} I.$$

and state all the assumptions upon which they depend.

A 2-ins. bar of wrought-iron, 10-ft. long, is held at the ends and whirled about a parallel axis at the rate of 100 revolutions per minute. If the distance between the axis of the bar and the axis of rotation is 10-ft., find the max. stress to which the metal of the bar is subjected.

5. The 15-ft. cross-ties of length for a single track bridge over la Grande Baise consist of two equal flanges, each composed of a pair of $2\frac{3}{4}$-ins $\times$ $2\frac{3}{4}$-ins. $\times$ $\frac{3}{8}$-in. angle-irons, rivetted to a 30-in $\times$ $\frac{3}{8}$-ins. web. The maximum load upon a tie consists of 42,000-lbs. (including weight of tie) uniformly distributed, and a weight of 1,600 lbs. at points distant $2\frac{1}{2}$-ft. from the centre. Assuming the tie to be merely supported at ends, find the max. stress in the material.

Also compare the max. and average intensities of shear, and find their values under the load in question.

6. What is meant by the *stiffness* of a beam? Determine the stiffness of the tie in question 5.

7. Design a cantilever of approximately uniform strength, 10-ft. long, to carry a load of 800 lbs. per lineal ft., and a single load of 800-lbs. at 2-ft. from the free end, the coefficient of working strength being 400-lbs. per sq. in:

8. Enunciate and prove Gordon's formula. Explain Rankine's modification of the same.

9. Compare the couples required to twist two shafts of the same material through the same angle, the lengths and diameters of the shafts being in the ratios m and n respectively.

A shaft 15 ft. long and $4\frac{1}{2}$-ins. in diar. is twisted through an angle of 2° under a couple of 2,000 ft. lbs.; find the couple which will twist a shaft of the same material 24-ft. long and 6-ins. in diar., through $2\frac{1}{2}$°.

10. A masonry dam h-ft. high is a right angle triangle ABC in section, and retains water on the vertical face AB. Shew that the thickness t of the base BC is given by

$$t^2 = \frac{4\,h^2}{5\,(6\,q + 1)}$$

q t being the deviation of the centre of pressure in the base from the middle point.

Also shew that the thickness will be given by,

$$t^2 = \frac{4\,h^2}{3\,(6\,q + 1)}$$

if the rock upon which the wall is built is seamy, and if it assumed that the communication between the water in the seams and that in the reservoir produces an *upward* pressure upon the base BC, varying uniformly from that equivalent to the head at B to nil at C. If q $\frac{1}{6}$ shew that, in order that the wall may slide, the coeff. of friction must be less than 67 per cent. in the first and 81 per cent. in the second case.

(wt. of a cub. ft. of masonry = $2\frac{1}{2}$ $\times$ wt. of cubic ft. of water.)

SECOND, THIRD AND B.A. Sc. EXAMINATIONS.

ESSAY.

THURSDAY, APRIL 4TH, 1889 :—MORNING, 9 A.M.

Examiners,..... { HENRY T. BOVEY, M.A., M. INST. C.E.
B. J. HARRINGTON, Ph.D.
C. H. MCLEOD, MA. E., M. CAN. SOC C.E.

Write an essay on one of the following subject :—

SECOND YEAR:—Construction and use of Engineer's Transit.
Estimation of Carbon and Nitrogen in Organic Bodies.
The Lathe.

THIRD YEAR:—Methods and Instruments employed in Geodesic Levelling.
Transmission of Energy by belts and ropes.
Volumetric Analysis and its sources of Error.

FOURTH YEAR:—Determination of Latitude.
Thermo-dynamic Laws.
Relation of Chemistry to Mining and Manufacturing Industries.

THIRD YEAR AND B.A. Sc. EXAMINATIONS (*Advanced.*)

THEORY OF STRUCTURES.

SATURDAY, 6TH APRIL, 1889 :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., M. INST. C.E.

1. A uniformly loaded beam with both ends absolutely fixed is hinged at the quarter spans ; shew that the slope is suddenly doubled on passing a hinge.

2. If the neutral axis of a symmetrically loaded girder, whose moment of inertia is constant, assumes the form of an elliptic or circular arc, shew that the B.M. at any point is inversely proportional to the cube of the vertical distance between the point and the centre of the ellipse or circle.

3. Shew that a uniformly loaded girder of two equal spans, with both ends *fixed*, is 2.08 times as stiff as if the ends were free and merely rested on the supports.

4. A continuous girder of two equal spans AB, BC, has its two ends A and C fixed. The load upon AB is a weight P at a distance p from A, and that upon BC a weight Q at a distance q from C. Shew that the BM, at B is a max. if

$$2l(Pp - Qq) = 3(Pp^2 - Qq^2)$$

the length of each span being l.

5. A hollow cylinder of internal radius r and external radius nr is subjected to an internal pressure p, and an external pressure p. ; determine the principal stresses at a distance x from the centre.

The chamber of a 27-ton breech-loader has an external diar. of 40-ins. and an internal diar. of 14-ins. Under a powder pr. of 18-tons per sq.-in., find the principal stresses at the outer and inner circumferences, and the work done in stretching the cylinder circumferentially, E being 13,000-tons per.-sq. in.

6. A pillar has one end fixed and the other is constrained to lie on the same vertical, shew that a force $P = 2\ E\ I.\ \frac{\pi^2}{l^2}$ is the least which will cause the pillar to bend laterally.

A steel strut made up of 2-ins × 2-ins × ½-in. Tees placed back to back is 10-ft. long, find the deviation so that the stress per sq.-in. may not exceed 12,000-lbs. under a load of 16,000-lbs.

7. The Estressol viaduct consists of four spans of 25-m. ; the main girders are continuous, the ends resting upon the abutments ; the dead load upon each girder is 1700k per lineal metre ; find the points of inflexion, the reactions and bending moments at each support, when an additional load of 2,000k covers the first span.

SECOND, THIRD AND B.A. Sc. EXAMINATIONS.

LOCOMOTIVE CONSTRUCTION. COURSE OF MECHANICAL ENGINEERING.

WEDNESDAY, APRIL 10TH 1889 :—MORNING, 9 A.M.

Examiners, ... { HENRY T. BOVEY, M.A., M.INST.C.E.
F. R. F. BROWN, M.INST. M.E.

1. How are the various types of Locomotives in general use on this continent classified ?

Give a description of the regular classes and their distinctive names, also state the various classes of service they are suitable for ?

2. Describe the four wheel truck, and then how the weight is carried.

What types of four wheel trucks are there ? Describe the poney truck.

3. What is meant by fixed "wheel base ?" What is meant by total "wheel base ?"

4. Given the "fixed wheel base" and distance to centre of truck wheels and radius of curve, how is the side play of the truck found ?

Example :—"Fixed wheel base" = 16′ 2″; Leading wheels to truck 6′ 8″; Radius of curve 400-ft. What is the side play ?

5. What conditions must be known before a locomotive can be satisfactorily designed ?

Give a list of the resistances against which a Locomotive has to operate in order of their importance.

6. Give formula for finding "tractive force" at tread of wheel per lb. average pressure of steam in cylinder, and shew how the formula is derived.

Which has the greater "tractive force" of the following two engines: (1) 17" diar. x 24" stroke and 62" Driving wheels. (2) 15" dia. × 22' stroke and 48" Driving wheels ?

7. What is "average piston speed," and what is about the maximum piston speed of Locomotives ? What is about the limit of high piston speed for useful work ?

8. What proportion of the total weight of the American type of Engine is the weight on the Drivers ?

What part of an Engine permits of the greatest variation in design as to weight ?

9. Sketch the longitudinal and cross sections of an ordinary type of waggon Top to fire-box. Show how the plates are joined. What is the material of fire box and how thick is each plate ?

Show by sketches how the fire hole is usually formed.

10. Sketch in plan and two elevations the formation of any good fire-box corner.

What is the water space and how large is it ? How is it formed ?

11. What is the usual size of tubes in Locomotive Boilers in America, and up to what length do they run at that size ? What are they made of ? How are they put in Boiler ? How made tight ?

12. What is the difference between a lifting and non-lifting Injector ? What is the principle of the injector as generally understood ?

13. Describe an ordinary type of frame for American Engines. Give proportions for widths of frame and principal sizes about the Driving boxes.

How are Cylinders attached to each other and to frame. Give outline sketch in cross section ?

14. How are the eccentrics fixed on the axle, and of what are they usually made ?

How is the throw measured ?

15. Give an outline of the principles of the Westinghouse Air Brake.

What is the function of the triple valve ?

What is the function of the Engineers Valve, and how operated ? Give a diagram of the positions of the handle.

How does the pump operate, and what is the office of the Pump Governor ?

SECOND, THIRD YEARS AND B.A. Sc. EXAMINATIONS.

MATERIALS (CEMENTS, BRICKS AND BUILDING STONES.)

FRIDAY, APRIL 12TH., 1889: MORNING 9 A. M.

Examiners,..... { HENRY T. BOVEY, M.A., M INST. C.E.
JOHN KENNEDY, M.INST. C.E.

N.B.—*All candidates must answer Question* 14.

1. Briefly describe the process of brick-making.

2. State the characteristics of a good brick.

3. Give a brief statement of some of the causes which lead to the disintegration of stones and bricks.

4. What are the characteristics to be observed in determining the suitability of a stone for building purposes?

5. State the constituents composing granite, and explain how these constituents severally affect its durability and hardness.

6. Describe the properties and uses of slates.

7. How are limestones affected by the presence of pyrites? How may the rates of disintegration of such stones be lessened?

8. Explain the action of frost upon building stones, and point out certain architectural features in modern structures which tend to intensify such action. How are limestones and sandstones affected by intense heat?

9. Distinguish between a sandstone, conglomerate, pudding-stone and breccia.

10. What sandstones decompose most rapidly? How are sandstones affected by the presence of oxide of iron?

11. Give Vicat's classification of Hydraulic Limes, and remark upon the properties of the several varieties.

12. Describe the wet process of manufacturing Portland Cement. How does this process essentially differ from the dry process?

13. Write out specifications for (*a*) concrete for use in submarine works (*b*) the granite masonry of a dock wall.

14. Name the substances on the Table, and state some of the uses to which they are applied.

THIRD YEAR AND B.A. Sc. EXAMINATIONS

COURSE OF MECHANICAL ENGINEERING. MACHINERY AND MILLWORK

MONDAY, APRIL 15TH, 1889:—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., M.INST. C.E.

1. Explain what is meant by a Lower Pair in mechanisms, and distinguish between the different kinds of Lower Pairs.

2. If it is assumed that the connecting rod in a direct acting engine is of infinite length, shew that the piston velocity curve is composed of two circles. How will the curve be affected if the obliquity is taken into account? Draw the curve of piston velocity when the connecting rod = 4-cranks.

3. Shew that the curve of piston velocity may also be taken to represent the curve of crank effort. Find the ratio of thrust at crosshead to tangential effort on crank pin when the crank is 45° from the line of stroke, the connecting rod being = 4-cranks.

4. In a Whitworth's quick return motion, the maximum return velocity is to the maximum cutting velocity as 5 is to 2; find the proportions, and compare the time of cutting to that of return.

5. Describe the Peaucellier linkage, and shew that it gives a straight line motion.

6. If T_1 and T_2 are the tight and slack tensions of a belt moving with a velocity v and weighing q per lineal unit of length, shew that the total friction between the belt and a pulley

$$= \frac{e^{f\theta} - 1}{e^{f\theta}} \left(T_1 - q\frac{v^2}{g} \right) = \left(e^{f\theta} - 1 \right) \left(T_2 - q\frac{v^2}{g} \right),$$

f being the coefficient of friction, and θ the angle subtended at the centre by the arc of contact.

A belt weighing $\frac{1}{2}$ lb. per lineal ft. connects two 42 ins. pulleys, one making 240 revolutions per minute. Find the limiting tension for which work will be transmitted. Also find the tight and slack tensions when the belt transmits 5 horse-power. ($f = .28$).

7. Why is it found that the two pulleys in the previous question do not make exactly the same number of revolutions per minute? Determine the difference in the speeds, the belt being 1 sq. in. in sectional area. ($f = .28$ and E = 28,400 lbs.).

8. In a pair of four sheered blocks, it is found that it requires a force P′ to raise a weight 5 P′, and a force 5 P′ to raise a weight 15 P′, shew that the general relation between the force P and the weight W to be raised is given by

$$P = \frac{2}{5} W - P''$$

Find the efficiency when raising the weights 5 P′ and 15 P′.

9. A uniform shaft of length l and specific weight w transmits work, shew that its efficiency is $1 - 2\mu l \frac{w}{f}$

μ being the coefficiency of friction, and f the max. stress in the material.

If the shaft is of steel, and if the loss due to friction is 20 per cent., find the distance to which work may be transmitted, μ being .05.

10. Describe Prony's brake.

11. Shew that the relation between the force P and the weight Q in a wheel and axle combination is of the form

$$\frac{P}{Q} = \frac{\alpha}{Q} + \beta$$

12. Shew that the efficiency of a pair of toothed wheels, of radii r and r_1 and pitch p, is

$$1 - f\left(\frac{1}{r} + \frac{1}{r_1}\right)\frac{p}{2}$$

f being the coefficient of friction. Also find the work lost by the friction of a pair of teeth, the number of teeth in the wheels being 32 and 16, and the diameter of the larger wheel, which transmits 3 horse-power at 50 revolutions per minute, 3 feet.

FACULTY OF APPLIED SCIENCE.

B.A. Sc. EXAMINATIONS.

COURSE OF CIVIL ENGINEERING. THEORY OF STRUCTURES.

(Paper III.)

FRIDAY, APRIL 5TH, 1889:—MORNING, 9 A.M.

Examiners,..... { HENRY T. BOVEY, M.A., M.INST. C.E.
P. A. PETERSON, M.INST C.E.

1. Design a plate-girder of 60-ft. span for a dead load of 400-lbs. per lineal ft., and a live load of 5,000-lbs. per lineal ft.

Is it more economical to make the girder 60 or 70-ins. deep?

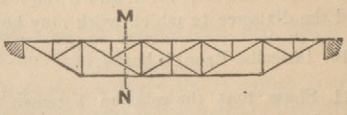
Find the depth which will give a minimum *strain-length*.

2. The trusses for a quarter-pitch roof of 90-ft. span are supported upon brick walls, 18-ft. high. The feet of the rafters on one side rest upon rollers. Determine the thickness of the walls to resist a horizontal wind-pressure of 40-lbs. per sq. ft., for given type of roof.

(Trusses 12-ft. C to C ; dead weight, 10-lbs. per sq.-ft. of roof, brick-work = 112-lbs. per cubic ft.)

3. Compare the relative proportions of iron required in the webs of a single and a double intersection Pratt truss of 100-ft. span, for the same live load.

4. The accompanying diagram represents a truss of 240-ft. span, and 30-ft. deep. Determine graphically the max. stresses in the members met by the plane MN. :



(Engine Panel excess = 24,000-lbs., Train Panel load = 18,000-lbs., Bridge Panel Load = 12,000-lbs.)

5. In a truss bridge the panels are 17 ft., and the floor-beams 13-ft. in length. Loads of 8, 12, 12, 12, 12, 10, 10, 10, and 10-tons, follow each other *in order* over the bridge, at distances of $7\frac{1}{2}$, $4\frac{1}{2}$, $4\frac{1}{2}$, $4\frac{1}{2}$, $7\frac{1}{2}$, $5\frac{1}{2}$, $6\frac{1}{2}$, and $5\frac{1}{2}$ ft. apart. Determine the max. moment of resistance of the floor beam, the platform weighing 500-lbs. per lineal ft.

6. Assuming that the truss bridge in the preceding question is of the single intersection type and has *ten* panels, determine the No. of 1-in rivets required in the third panel from one end, to connect the web with the chords, the panel live-load being 30,000-lbs., and the panel dead-load, 10,000-lbs.

7. A lattice girder of 40-ft.-span with horizontal chords and a web composed of two system of triangles has to support dead and line loads, each of $\frac{1}{2}$ ton per lineal ft. The apices of the triangles divide the chords into four equal segments. Determine the minimum strain-length, when the members are (a) rivetted together (b) pin-connected.

B.A. Sc. EXAMINATIONS.

COURSE OF MECHANICAL ENGINEERING. ENGINE PROPORTIONS.

FRIDAY, 5TH APRIL, 1889.

Examiners, ... } HENRY T. BOVEY, M.A., M. INST. C E.
..... } F. R. F. BROWN, M. CAN. SOC. C.E.

1. Find the number of $\frac{3}{4}$-in. bolts required for the cylinder-head of an engine working with steam at an initial pressure of 100-lbs. per sq.-in. ; the diar. of the cylinder being 35-ins.

2. What considerations govern the design of a piston rod?

Determine the diar. of a steel piston rod for the engine in Question 1 for a speed of 66 revolutions per minute, the cut-off being at one-half the stroke, the back pressure 2-lbs. per sq.-in., and the stroke 70-ins.

3. Design a cross-head for an engine with only two guides.

4. What is the most important requisite of a guide?

Give a method for determining the "safe" dimensions of a guide. Find the minimum distance between the guides.

Ex. Engine in Question 2, breadth of guide = 4-ins.; connecting-rod = 4 cranks.

5. State the considerations which govern the design of a crank-pin.

6. Shew that the thickness of a key for a shaft is approximately,

$$4.\frac{b^2}{d} + 10.\frac{b^4}{d} +$$

b being its breadth in inches and d the diar. of the cylinder in inches.

What is the best position for a key? To what part of the key should the taper be given?

7. Explain how to determine the diar. of a shaft subjected to both a bending and a twisting moment.

Ex. A shaft (steel) 30-ft. long, carrying a 4-ft. pulley, at 10-ft. from one support, the pull upon the belt being 750-lbs., and the revolutions 60 per minute.

8. In the case of a shaft with three cranks at 120 degrees apart, shew how to determine the proper proportions of the cranks and shafts.

9. Find the work given out by the fly-wheel when three cranks are employed as in Question 8.

10. Coeff. of steadiness $= \frac{1}{20}$, stroke = 30-in., diar. of cylr. = 15-ins. max. diar. of fly wheel = 80-ins., No. of revols. per minute = 80; find weight of fly-wheel.

If the wheel is in 4 segments, find the proper sectional area for an arm, (one to each segment).

B.A. Sc. EXAMINATIONS.

CIVIL ENGINEERING COURSE. THEORY OF STRUCTURES (*Paper IV.*)

MONDAY, 8TH APRIL, 1889:—MORNING, 9 A.M.

Examiner..... ..... HENRY T. BOVEY, M.A., M.INST.C.E.

1. State the conditions of equilibrium of a masonry arch, and explain what is meant by the *middle third* theory. Can this theory be regarded as a true solution of the problem of arch stability? Why?

2. What is the "joint of rupture"? How may its position be tentatively found in a given arch?

3. What is the object of a "transformed catenary"? Find its equation.

The soffit of an arch of 30-ft. span and 10-ft. rise is a transformed catenary. The masonry rises 10-ft. over the crown, and the specific weight of the load upon the arch may be taken at 120-lbs. per cub.-ft. Determine the direction and amount of the thrust at the springing.

4. Distinguish between a "curve of pressure" and a "curve of centres of pressure."

Assuming that the arch is divided into elementary portions by *imaginary* joints parallel to the direction of the superincumbent load, show that the locus of the curve of the centres of pressure is:

$$\int_0^x \omega.z.x.dx = x \int_0^x \omega\, z.dx - P.Y.$$

P being the horizontal thrust at the crown. Hence determine the limiting span of an arch with a horizontal upper surface and a parabolic soffit (latus rectum. = 40 ft.), the depth over the crown being 6-ft., and the specific weight of the load 120-lbs. per cub.-ft. The thrust at the crown is horizontal and 4-ft. above the soffit.

5. Deduce the conditions of equilibrium of an arched rib of uniform section and hinged at both ends.

Shew that in a semi-circular rib, the apices of the several linear arches corresponding to a series of weights concentrated at different points, lie in a horizontal line at a vertical distance from the springing equal to half the length of the rib. Why is it advisable in practice not to employ arched ribs with their axes rising vertically at the springings?

A semi-circular rib of 28-ft. span carries a weight of $\frac{1}{4}$-ton at 4-ft. (measured horizontally) from the centre. Find the thrust and shear at the centre of the rib.

6. In a suspension bridge (recently blown down) each cable was designed to carry a total load of 84-tons (including its own weight). The distance between the piers = 1270-ft.: the deflection of the cable = 91-ft Find (*a*) the length of the cable, (*b*) the pull on the cable at the piers and at the lowest point, (*c*) the amounts by which these pulls are changed by a variation of 40 °F from the mean temperature, (*d*) the tension in the back-stays, assuming them to be approximately straight and inclined to the vertical at the angle whose tangent is $\frac{2}{5}$.

7. The platform of the bridge in the preceding question was hung from the cables by means of 480-suspenders (240 on each side).

Find the pull on each suspender and the total length of the suspenders the lowest point of a cable being 14-ft. above the platform.

B.A. Sc. EXAMINATIONS.

ADVANCE COURSE IN CIVIL ENGINEERING. THEORY OE STRUCTURES (*Paper II.*)

WEDNESDAY, APRIL 10TH, 1889:—MORNING, 9 A.M.

Examiner, ... HENRY T. BOVEY

1. Shew that the Theorem of Three Moments in its most general form may be supressed analytically as follows:

$$M_{r+1} \cdot l_r + 2 \cdot M_r \cdot \left(l_r + l_{r+1} \right) + M_{r+1} \cdot l_{r+1} =$$

$$-6 A_r \frac{z_r}{l_r} - 6 A_{r+1} \frac{z_{r+1}}{l_{r+1}} + 6 E.I. \frac{d_2}{l_{r+1}} - 6 E.I. d_1 \left(\frac{1}{l_r} + \frac{1}{l_{r+1}} \right)$$

Apply the result to determine the max. B M at the intermediate support of a continuous girder of two equal spans, each of 50-ft., when traversed by a series of four weights each of 6-tons following each other at fixed distances of 5-ft.; the depths of the 2nd and 3rd support below the horizontal through the 1st support being 1-in. and 2-ins., respectively.

2. The section ABCD of a retaining wall for a reservoir has the face BC vertical and the profile of the water-face AD is a parabola, having its vertex at D. The width of the base DC is four times that of the top AB, If AB = a, find the height of the wall a, also trace the curves of resistance when the reservoir is (*a*) full, (*b*) empty.

(Cub.-ft. of masonry = 2 × cub.-ft. of water.)

3. A stiffening truss for a suspension bridge of span l is hinged at the centre. Trace the curves of max. shearing force and max. bending moment as a weight W travels over the truss. Also determine the point at which the bending moment is an absolute maximum.

4. The linear arch for an arched rib of small rise and hinged at both ends is a parabola.

The load upon the rib consists of a number of weights concentrated at different points. Show how to find the direct thrust and the shear at any section of the rib. Ex. span= 50 ft. rise = 15ft.; weights of 1,2 and 3-tons at 15, 25, and 40-ft. respectively from one end.

5. A lattice girder of depth h and span 40-ft., consists of two systems of triangles (base = 10-ft.). The dead load upon the truss is 1200 lbs. per lineal ft, and the truss is also subjected to a live load of 1600-lbs. per lineal ft.; compare the *strain-lengths* (*stress in a member its length*) when the diagonals are rivetted and when pinned. Also find the value of h in each case, which will make the strain-length a *minimum*.

B.A. Sc. EXAMINATIONS.

COURSE OF CIVIL MECHANICAL AND MINING ENGINEERING. HEAT AND HEAT ENGINES (*Paper I.*)

WEDNESDAY, APRIL 17TH, 1889:—MORNING, 9 A.M.

Examiner,..... HENRY T. BOVEY, M.A., M.INST. C.E.

1. Explain the meaning of the terms *specific heat, latent heat of evaporation, total heat of steam, mechanical equivalent of heat.*

5-lbs. of water are raised in temperature from 20° C to 100° C, and are then completely evaporated. Find (*a*) the *mean* specific heat of the water between the given temperatures, (*b*) the latent heat of evaporation, (*c*) the total heat of steam, (*d*) the equivalent energy in ft.-lbs.

2. Show that the efficiency of a theoretically perfect heat engine is $\frac{T_1 - T_2}{T_1}$, T_1 and T_2 being the absolute temperatures of the sources of heat and cold respectively.

Steam is generated from water taken at 60° F, enters the cylinder at an abs. pr. of 67-lbs. per sq. in., and expands to an abs. pr. 2-lbs. per sq. in. Find the *max. theoretical* horse-power per lb. of steam.

3. In an ideal engine the working substance (assumed of same thermal properties as air) of sp. vol. 13 cub.-ft. is taken at 15-lbs. pr. and 60° F, and compressed adiabatically to a pr. of 60-lbs. The temperature rises to 3,00° F at constant pressure, and the substance expands adiabatically to 15-lbs pr. The discharge takes place at this pressure, until volume of substance is the same as initially. Determine the efficiency, and the mean effective pressure. (K = 183.45).

4. In an engine using steam expansively, the initial pr. = 80-lbs. per sq. in. ab., back pr. = 3-lbs. per sq. in. abs., rate of expansion = 3; find effective work per lb. of steam in heat units, and the total weight of steam supplied per effective I.H.P. per hour. Assume hyperbolic expansion. (wt. of cub. ft. of steam at 80-lbs. = .2198-lbs.)

5. How will the result in the preceding question be affected if there is a clearance of $\frac{1}{20}$th vol. of cylr. at each end?

6. An engine indicating 100 H.P. uses 18-lbs. of steam per I.H.P. per hour, and expands down to 5-lbs. absolute; how much injection water at 60° F. will be required per hour, the temperature of the hot well being 106° F.? (at 5-lbs. pr., temp. of water = 162°.3 F)

7. Show how the accompanying ideal diagram will be modified by (*a*) *throttling*, (*b*) too *late* admission of steam, (*c*) too *early* admission of steam, (*d*) too short a slide-rod, (*e*) opening to exhaust too soon, (*f*) initial condensation. How would you remedy these defects?

8. In a compound engine, the piston area of the H.P. cylr. is 20-sq. ft. and of the L.P. cylr., 48-sq. ft., initial pr. = 60-lbs., back pr. = 2-lbs., No. of revols. per min. = 30 ; stroke of each piston = 3-ft. ; rate of expansion in H. P. cylr. = 3. Determine the I.H.P., the law of expansion being that of saturated steam.

HEAT AND HEAT ENGINES (*Paper II*)

WEDNESDAY, APRIL 17TH, 1889 :—AFTERNOON, 2.30 P.M.

1. The arms of a governor form a parallelogram OABC, O being the point of suspension, and C the slide. The governor is loaded with a weight 2P on the slide, and A and B are the centres of the balls, each of weight W. Shew that when the governor is making n revolutions per second

$$OC = \frac{W + 2P}{W} \cdot \frac{g}{4\pi^2 n^2}$$

If each ball weighs 120 lbs., and the load upon the slide 400 lbs., find the vertical range of the balls, so that the maximum and minimum velocity of any part may not differ by more than 1-20 of an average velocity corresponding to 30 revolutions per minute.

2. The travel of a slide valve is 3 in. ; steam is admitted when the crank is 16° from the dead point, and is cut off at 116° ; find the outside lap, the angular advance and the lead.

3. Shew graphically how an increase of the angle of advance will affect the lead, ranges of compression and expansion, and the opening and closing of the exhaust part.

4. Explain the object of variable expansion, and describe any system by which this object is attained.

Shew that the distances apart of the centres of the slide valve and the expansion valve in Meyer's valve gear may be represented by the chords of a certain circle.

5. Explain in general terms the difference between a simple non-condensing engine, a condensing engine, a compound non-condensing engine.

6. Describe, with sketches, the construction of a piston, and explain the method adopted for keeping the piston and piston rod steam-tight.

7. Describe the eccentric for working the slide valve of a steam engine, and explain how it is thrown in and out of gear.

8. Enumerate the functions of a fly-wheel and the principles involved in its construction.

A cast-iron fly-wheel is built up of two halves, the sectional area of the rim being 5 sq. ins. It makes 90 revolutions per minute, and its mean diameter is 20 ft. ; determine the sectional area of the bolts at the joints.

How much energy must be given out so that the number of revolutions may be reduced to 80 per minute ?

B.A. Sc. EXAMINATIONS

ADVANCED COURSES OF CIVIL AND MECHANICAL ENGINEERING.

SATURDAY, 20TH APRIL, 1889:—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., M.INST. C.E.

1. A vessel contains a mixture of $\frac{1}{3}$-lb. of steam and $\frac{2}{3}$-lb. of water at 5-lbs. per sq. in. Heat is added until the pressure is 15-lbs. per sq. in. Find the weight of water evaporated, and the heat imparted to the mixture.

2. If a communication is made between a vessel containing 1-lb. of saturated steam at 15-lbs. pr. per sq. in., and the vessel in Question 1 in its initial state, find the condition of the mixture.

3. Prove the relation

$$\frac{r}{T} = \frac{u}{J} \cdot \frac{dp}{dt}.$$

1 lb. of water is changed into steam at the atmospheric pressure, determine the change in the boiling point corresponding to an increase of the pressure by *one* atmosphere.

4. Show that the latent heat of isothermal expansion is measured by the product of the increase of pressure per unit increase of temperature, the volume being constant, into the absolute temperature.

5. The normal speed (w) of an engine is disturbed by some cause so that it becomes w_1, w_2 at the beginning and end of a semi-revolution. If $w > \frac{w_2}{2}$ and $< \frac{w_1 + w_2}{2}$, show that the speed of the engine from semi-revolution to semi-revolution will be alternately greater and less than the normal speed, and that it continually approximates to the latter.

6. State all the assumptions made in deducing the equation

$$p.v = a\,T - b\,p^{\frac{1}{4}}$$

for superheated steam.

If the pr. and vol. of superheated steam change, and if there is no change in the internal work, shew how to find the change in temperature.

1-lb. of pure saturated steam at 6 atms. expands until its volume is increased six times. Find the fall in temperature, and shew that the steam will be super-heated.

B.A. Sc. EXAMINATIONS.

COURSES OF CIVIL, MECHANICAL AND MINING ENGINEERING.
HYDRAULICS (*Paper I.*)

MONDAY, APRIL 22ND, 1889:—MORNING, 9 A.M.

Examiner,..... .....HENRY T. BOVEY, M.A., M. INST. C.E.

1. Define the terms *coefficient of velocity, coefficient of contraction,* and give an experimental method of finding the latter. A jet issued horizontally from an orifice in the vertical face of a cistern under a 10-ft. head At 12-ft., measured horizontally, from the orifice, the vertical depression of the stream line was $3\frac{3}{4}$-ft. What was the coefficient of velocity?

2. Find the loss of head at a *sudden* enlargement of a pipe section.

A 4-ins. pipe suddenly enlarges in diar. at the point A to 6-ins. The stream lines are again parallel at a point B, the rise from A to B being 2-ft. The quantity of water passed per second is 50 gallons, and the pressure at A is 96-lbs. per sq.-in. What is the pressure at B?

3. The horizontal section of a lock chamber may be assumed a rectangle, the length being 360-ft. When the chamber is full, the width between the side walls, which have each a batter of 1 in 12, is 45-ft. How long will it take to empty the lock through two sluices in the gates, each 8-ft. by 2-ft.? ($c = \frac{5}{8}$).

4. Show how to determine the discharge over a weir taking the velocity of approach into account. How would you make allowance for side contractors?

A stream 100-ft. wide and 4-ft. deep flows at the rate of 2-ft. pe second. A dam is built across the stream, and a rectangular notch 80-ft. long and 2-ft. deep is cut in the dam. The water flows through the notch and rises to the level of the top of the dam. Find the height of the dam.

5. Enunciate the laws of fluid friction.

A caisson having a transverse sectional area of 800 sq. ft. has one-half of this area submerged, and is pulled at the rate of 1 mile per hour against a current running at the rate of 3 miles per hour. What must be the power of the tug to do this work? ($f = .004$).

6. What is meant by the hydraulic gradient of a pipe? Shew how the flow in a pipe is affected by its position above or below the hydraulic gradient.

7. Briefly state the results of Darcy's experiments.

A fire engine supplies water to a $2\frac{1}{2}$-in. leather hose, 500-ft. long, with a 1-in. nozzle, at the rate of 150 gallons per minute. Find the longitudinal pull on the hose. ($f = .032$).

8. Find the H. P. required to raise 550 gallons per minute to a height of 60-ft. through a pipe 100-ft. in length and 6-in. in diar., the coeffi. of fn. being .0064.

9. Shew how to determine the head absorbed by the friticonal resistance to flow in an open channel, the motion being *steady*.

The sides of an open channel of given inclination slope at 45°, and the bottom width is 20-ft. Find the depth of water which will make the quantity of flow across a vertical section a maximum.

HYDRAULICS (*Paper II.*)

MONDAY, APRIL 2ND, 1889:—AFTERNOON, 2 P.M.

1. Shew how to determine the mechanical effect of a Poncelet undershot water-wheel. If the velocity (v^2) with which the water leaves the wheel is a minimum, and if the angle (γ) between the direction of the approaching water and the tangent to the wheel's periphery, at the point of entrance, is 15°, shew that the speed of the wheel (u) must $= .516 \times$ velocity of approach (v_1), and that the efficiency is .928.

2. A breast-wheel passes 12-cub. ft. of water per sec, and for the speed $u = \frac{4}{5} v_1 = 4$ ft. per sec., the loss of mechanical effect due to the relative velocity V being destroyed, is a minimum. Find this effect.

3. Shew that the water surfaces in the buckets of an overshot water-wheel, working at a uniform speed, are approximately portions of cylindrical surfaces, with respect to an axis at the distance $\frac{g}{A^2}$ from the centre of the wheel, A being the angular velocity.

Also find the deviation of the water surface from the horizon in a wheel of 30-ft. diar., making 5 revolutions per minute, the angle of discharge being 48°.

4. If h_2 is the head corresponding the velocity v_2 with which the water leaves an outward or an inward flow turbine, shew that

$$\frac{u_1 . v'_w}{g} = h - h_2$$

5. Explain how the ratio $\frac{r_1}{r_2}$ in outward and inward flow turbines is affected by the centrifugal head $\frac{u_2^2 - u_1^2}{2.g}$.

6. Shew that the useful effect of a reaction wheel increases with the linear velocity of the end of the discharging tube. Does the efficiency necessarily increase? What will the efficiency be if (a). $v^2 = 2g\,h$, (b) $v^2 = 4\,gh$, (c) $v^2 = 8\,g\,h$.

B.A. Sc. EXAMINATIONS.

ADVANCED COURSE OF MECHANICAL ENGINEERING. MACHINERY AND MILLWORK.

WEDNESDAY, APRIL 24TH, 1889:—MORNING, 9 A.M.

Examiner.....HENRY T. BOVEY, M.A., M.INST. C.E.

1. A pair of 250 horse-power engines working on cranks at right angles are making 60 revolutions per minute. Assuming the steam pressure and resistance to be uniform, find the maximum and minimum moments of crank effort, and the fluctuation of energy.

Draw the diagram of crank effort, and from it determine the coefficient of energy.

2. Shew that rolling contact requires that the point of contact must lie on the line of centres, and also that if the angular velocity ratio is to be a constant quantity, the point of intersection of the common normal and the line of centres must be a fixed point.

3. Shew by an example how new motions may be obtained by combining together two closed chains having one link in common.

4. Determine an expression for the total condensation of steam during one stroke and without compression, clearly stating all the assumptions you make.

Shew that the most economical point of cut off is given by the equation

$$\frac{l}{r} = \frac{p_3}{p_1}\left(\frac{1}{L} + \frac{.055}{d}\right)\frac{D.d}{A.d + 1.27\,D}\log\frac{r}{e}$$

$$\text{where } D = 2.\frac{T_c - T_e}{N}.C \text{ and } A = \frac{62\frac{1}{2}}{v}$$

N being the No. of strokes per minute, T_c and T_e the temps. at cut-off and during exhaust, v the sp. vol. at pressure p_3; and C the constant of condensation. Explain how the result is affected by compression.

5. Construct a curve of crank effort for the accompanying indicated diagram, taking into account the effect of inertia.

B.A. Sc. EXAMINATIONS.

ADVANCED COURSE OF CIVIL ENGINEERING HYDRAULICS.

WEDNESDAY, APRIL 24TH, 1889:—9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., M. INST. C. E.

1. Shew that in a stream of uniform depth and indefinite width, that the velocity at a depth y below the surface, the motion being uniform, is given by

$$v = v_o + a\,y - \frac{w.i}{2.k}.y^2,$$

a and v^o being constants.

Hence, also, shew that if v_2 is the max. value of v,

$$v = v_2 - 36.3\sqrt{h.i.}\left(\frac{x-a}{1-a}\right)^2,$$

$$\text{where } \frac{w.i.h^2}{2k} = 36.3.\sqrt{h.i.}\ ,\ a = \frac{h'}{h}\ ,\ x = \frac{y}{h}\ ,$$

h = depth of stream, and h′ = depth corresponding to v_2.

2. In the preceding question find the difference between the mid-depth and mean velocities, and explain to what practical use the result has been applied.

3. Deduce the fundamental equation of steady varied motion, and apply to a stream in a rectangular bed of constant slope and indefinite width.

Discuss the case in which $h = H < a\frac{u^2}{2g}$.

4. A downward flow turbine has an internal diar. of 2-ft.; the breadth of the wheel is 6-ins.; it passes 10 cub. ft. per min., under a head of 32-ft.; find its efficiency.

5. Determine the head absorbed by friction in a reducer 10-ft. long, with a diameter varying uniformly from 6-ins. at one end to 10-ins. at the other, the discharge being 10 cub. ft. per sec.

METEOROLOGY.

WEDNESDAY, APRIL 24TH, 1889.

Examiner,..... C. H. MCLEOD, MA. E.

1. Name the three thermometer scales in extensive use, and compare them. (*a*) What are the advantages and disadvantages in the use of mercury as a thermometric liquid?

2. State what you consider to be the essential conditions of a good thermometer exposure. (*a*) How would you observe the temperature of the air, without the use of a screen?

3. Describe the construction of an instrument for recording the duration of bright sunshine.

4. How is the amount of moisture in the air usually expressed? Describe the form of hygrometer employed at Meteorological Stations in Canada.

5. Describe the formation of (*a*) dew, (*b*) hoar-frost, (*c*) fog.

6. What are the principal causes which produce rain? (*a*) How does the formation of rain affect the temperature of the air?

7. Given the direction and velocity of the wind for each hour in the year, how would you find the resultant direction and velocity?

8. Give a classification of clouds, and state what you consider to be, roughly, the average height of each class above the earth's surface.

9. Show by a sketch a solar halo with parhelia, marking on it the principal dimensions.

NOTE:—In addition to passing on this paper, Candidates are required to correctly make and reduce such meteorological observations as are recorded at First Class stations.

GEODESY AND PRACTICAL ASTRONOMY.

FRIDAY, APRIL 19TH.

Examiner,.....C. H. MCLEOD, MA.E

1. Show that in observing altitudes with a given sextant and artificial horizon, the inclination of the index glass to the horizon is constant. How may this circumstance be applied to assist in finding objects? How would you measure this angle?

2. Explain how you would investigate the inequality of the pivots of a transit instrument, and show that where the level and transit *Vs* have equal angles the correction is

$$p = \frac{B^1 - B}{4}$$

where B^1 and B are the observed inclinations of the axis.

3. Show that in the transit instrument,

$$a = T + \Delta T + a \frac{\sin(\phi - \delta)}{\cos \delta} + b \frac{\cos(\phi - \delta)}{\cos \delta} + \frac{c}{\cos \delta}$$

and explain how you would obtain a set of equations for the determination of ΔT, the quantities a and c being unknown.

4. Show how the zenith telescope is applied to the determination of latitude.

5. Compare the relative accuracy of the make and the break circuit methods of chronographic registration. How do double and single pen chronographs compare as regards convenience and accuracy?

6. Describe carefully a method of measuring a base line by means of steel tapes or wires. What corrections must be applied, and how is the absolute length determined?

7. Obtain a formula for the azimuthal correction due to the inclination of the horizontal axis of a theodolite.

8. Show how to find the length of one second, on a parallel of the spheroid, at any latitude.

9. A great circle touches a parallel of latitude, find the length of an offset to the parallel, at a given distance along the great circle.

10. Explain the construction of a large map by the Stereographic method. Suppose the plane of projection to be tangent at the pole, what would be the extent of the distortion along meridians at 60° of latitude?

11. How are stations made visible at great distances in Geodetic Surveying? (*a*) Under what conditions are corrections necessary, and how are they obtained?

12. Show by a sketch the frame work required to elevate a station to a height of 50 ft. above the surface of the ground. (*a*) What precautions are necessary in the use of such a station, and what is the nature of the errors to which work there would be subject.

NOTE :—In addition to passing on this paper, Candidates are required to make a determination of the error of a mean-time clock, using a sidereal chronometer in the observation of the transits of, at least, six stars. To determine all the instrumental errors, and to so arrange the observations and reductions as to obtain the best result. Also to make the observations and to obtain the value of the dip of the magnetic needle, the magnetic declination and the value of the horizontal force of the earths magnitism.

THIRD YEAR.

SURVEYING.

TUESDAY, APRIL 16TH, 1889 :—9 A.M. TO 1 P.M.

Examiners, ... { C. H. MCLEOD, MA.E. / W. J. SPROULE, MA.E.

1. Measure the angle at the one of the transit instruments between the stations A and B ; making three sets of three repetitions in each of the reversed positions of the instrument. (*a*) Obtain a probable error for your result.

2. Measure the index error of the sextant.

3. The angles of a quadrilateral are given on the blackboard, as measured, adjust the angles. (*a*) Given the length of one of the sides, show how to apply the side-equation adjustment.

4. Describe the *rating* of a current-meter.

5. Describe the application of a filar micrometer to the circle readings of a theodolite, its use, and the correction of the readings.

6. Sketch a system of triangulation for a secondary geodetic survey under each of the following conditions. (*a*) Least expense for uniting distant points, (*b*) uniting distant points with greatest possible accuracy, (*c*) to cover a large area.

7. Given the diameter of a cylindrical signal, and the distance of the signal obtain a formula for the correction for "white phase."

8. Obtain a formula for computing the area of a portion of a sphere bounded by meridians and parallels.

IX. State what you know of the different styles of plans, and what you consider of importance, in order to secure an effective or beautiful result.

X. Describe briefly some of the most common methods now in use for copying drawings.

XI. Two distant objects lie in a plane oblique to the horizon. Give a method for obtaining the horizontal angle between them, your instruments being a box sextant and an artificial horizon.

12. Four Stars were observed at Montreal, with a transit instrument, on March 30th, 1889. Determine the error of the clock. Clock rate, zero. $b = +0{\cdot}08$s.

	LAMP WEST.		LAMP EAST.	
A =	+ 0.50	− 1.08	+ 0.61	− 0.45
B =	+ 0.92	+ 2.53	+ 0.81	1.89
C =	+ 1.04	+ 2.75	+ 1.01	2.94
	h. m. s.	h. m. s.	h. m. s.	h. m s.
T =	7 11 58.50	7 19 36.91	7 21 36.91	7 33 53.30
a =	7 11 42.66	7 19 19.44	7 21 7.77	7 33 36.76

(*a.*) A comparison of clocks, made before the transit observations gave 6h. 58m. 20s. on the sidereal clock, and 6h. 18m. 16s. on a mean-time clock. Determine the error of the meantime clock on 75th meridian time. The langitude is 4h. 54m. 18·54s.

NOTE:—The instrumental work in question 1 must be completed in forty minutes

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SECOND YEAR.

SURVEYING.

WEDNESDAY, APRIL 17TH, 1889:—MORNING, 9 TO 12.

Examiners, ... { C. H. McLEOD, MA.E, W. J. SPROULE, MA.E.

1. Make *a traverse survey*, with the transit, of the lines *A* to *B*, *B* to *C*, from the meridian *A* to *M*, and give the corresponding check readings of the compass.

2. Measure the *collimation error* of the Y level at the distance of the rod.

3. Plot the figure on the blackboard, and obtain its area by reducing it to a triangle of the same area.

4. Find the point at which a perpendicular from an inaccessible point meets a line, (*a*) by trial, (*b*) by the use of a chain and ranging rods?

5.

Lines.	Bearings.	Distances.
A B	N. 52° E.	10·64
B C	S. 29¾° E.	4·09
C D	S 31¼° W.	7·68

Calculate the length and bearing of the line A to D.

6. Explain how you would find the declination of the magnetic compass at a given place. (*a*) To what variations is the magnetic needle subject?

7. How are stadia wires applied to the transit instrument, and how are they used? (*a*) To what kinds of work is the stadia method of surveying specially applicable?

8. The following notes have been taken from a section of a railway location. The road bed is 18 feet wide in cuttings, and 16 feet in embankments. The surface of the ground slopes gently downwards to the left. Give a set of notes, such as would be used in "setting-out" the work.

Station.	Elevations.	
	Gradient.	Surface.
25	90·00	101·45
26	89·00	98·22
27	88·00	80·30

IX. An area $D\,A\,B\,C$ of 1,000 square feet is cut from a larger lot by the line $D\,C$. A to D is due north, A to B is 80 ft. and N 55° E., B to C is 8 ft. and N 35° W. Find the line C to D in length and direction, and the length of $A\,D$.

X. Explain how you would use a transit instrument, *not* in adjustment for collimation, in making a trigonometrical or traverse survey.

XI. You are given instruments and men, with instructions to make a survey of St. Helen's Island, fixing the roads, buildings and shore line; and to plot the same on a scale of 100 ft. to an inch, state how you would proceed.

12. There is a 4° curve uniting lines making an angle of 35°. It is required to change the curve so that one of the tangent lines shall be parallel to its former position and 50 feet from it. Calculate the distance between the old and the new tangent points on the other tangent line.

Note:—Questions 1 and 2 are instrumental. Question 1 must be completed in 20 minutes.

THIRD YEAR.

MACHINERY.

(Riveted Joints and Toothed Gearing.)

TUESDAY, APRIL 16TH, 1889:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E

1. How does the strength of a drilled plate compare with the original tenacity of the plate?

2. Show that in single riveted joints

$$p = 0.785 \frac{d}{t} \cdot \frac{f_s}{f_t} + d$$

where p = pitch, d = diameter of rivet, t = thickness of plate, f_s and f_t = shearing and tearing resistances.

3. Sketch, to scale, the junction of a single butt riveted joint with a covering strip.

4. A spur wheel of 3 in. diameter has teeth the points of which are arcs of circles of 1 in. radius, struck from centres $\frac{1}{4}$ of an inch within the pitch line, and the roots of which are radial. Find the form of the teeth on a 4 in. wheel to work with it.

5. Explain an approximate method of drawing cycloidal teeth, by arcs of circles.

6. Discuss the limiting safe velocity of toothed wheels, and obtain a formula therefor, employing the proper values of stress for cast iron.

7. Show that the efficiency of a worm and wheel is $= \frac{\cot \Theta}{\cot (\Theta - \phi)}$, where Θ = inclination of the worm thread and ϕ = angle of repose.

SECOND YEAR.

MECHANICAL WORK.

MONDAY, APRIL 8TH:—9 TO 12 A.M.

Examiner,.....C. H. MCLEOD, MA.E.

1. Explain how you would cut a screw by hand, in a lathe, and describe the tools you would employ.

2. Describe a method of ball turning, so as to obtain a highly finished and truly spherical form.

3. Sketch and explain the use of the principal tools used in hand turning.

4. Describe the manufacture of a reamer, explaining how it is brought to a "standard" diameter.

5. Discuss the forging, hardening and tempering of metal cutting tools.

6. To what kinds of work is the milling-machine specially adapted? How are milling cutters made?

7. Discuss the uses and the care of a grindstone in a machine shop.

8. What are the tools required in marking out work and how are they used?

SECOND YEAR.

MECHANISM,

WEDNESDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. A swash plate gives motion along a line parallel to its axis of rotation. Show that it is harmonic motion.

2. Determine the ratio between the *angular* velocities of a crank and its connecting rod at any instant. (*a*) When is the velocity of the cross-head end of the rod at a maximum? Why? (*b*) Find a relation between the position of the crank and the distance of the cross-head from a dead-centre.

3. Show that a rod being jointed at its centre to another rod of half its length may be used to obtain straight line motion. (*a*) How is this modified in the "Grasshopper" parallel motion? Show that this arrangement will give approximate straight line motion.

4. What are the conditions to be observed in shaping the teeth on spur wheels in order that the velocity ratio may be constant? Prove this. (*a*) Trace the path of contact between (1) a pair of epicycloidal teeth in gear, (2) a pin wheel and its rack, (3) involute teeth.

5. Obtain an epicyclic train of which the first and last wheels are on the same axis, and make respectively 40 and 50 revolutions per second. (*a*) Show how you would arrange to make this velocity-ratio variable.

6. Explain the construction and uses of the steam-engine indicator. Sketch a diagram which might be obtained from a non-condensing engine cutting off at about one-third stroke, and mark on it the points of:—opening exhaust, closing exhaust and opening steam valve.

7. Show how to obtain the necessary feed motion to the cutter on a boring bar by means of a train of spur wheels on fixed axes.

8. Sketch the following, and explain briefly, where necessary, any peculiarities in the form of:- (*a*) the dead-beat escapement for a clock, (*b*) the "going fusee" used to maintain the movement of a clock in winding (*c*) an automatic numbering machine.

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

SATURDAY, MARCH 30TH, 1889;—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. Two adjacent edges of the base of a square prism are inclined to the horizontal at 30° and 45°, respectively. Find the horizontal projection and a vertical projection on a plane containing an edge of the base. The sides of the end are 1 in. and the length of the prism 2 in.

2. There is a line inclined at 45° to the horizontal at 30° to the vertical. Find the traces of the plane containing the line and being itself inclined at 60° to the horizontal.

3. Given the projection of four points as shewn on the blackboard. Find the centre of the sphere which contains the points, on its s rf ce.

4. A cylinder of 2 in. diameter is penetrated by a cone so that the apex of the cone is in the axis of the cylinder and the axis of the cone makes an angle of 15° with the axis of the cylinder. The apex angle of the cone is 60°. Find the line of penetration, in plan and elevation.

5. Show an axometric projection of a mortice and tenon joint; the angles between the axes being 100°, 110° and 150°. Find the scales.

6. A cylinder of 2 in. diameter is surmounted by a plinth of 3 in. side. Find the orthographic projections of the shadow cast on the cylinder and on the horizontal, when the plan and the elevation of a ray both make angles of 45°, with xy.

7. A sphere is 3 in. in diameter and its polar axis is at 45° to the plane of projection. Project orthographically a meridian making an angle of 30° with the central meridian, and the 60° circle of latitude.

8. Find the perspective projection of an hexagonal pyramid standing on a circular base, when an edge of the base of the pyramid makes an angle of 30° with the picture plane and the object is 5 ft. on the left and 5 ft within the picture. The sides of the haxagon are 2 ft., the altitude of the pyramid 8 ft., the diameter of the base 5 ft. and its height 2 ft. Scale $\frac{1}{2}$ in. = 1 ft.

9. Find the perspective of the shadow cast by the object in question (8), when the rays are as in question (6).

NOTE.—Civil Engineering students will omit question 3, Mechanical Students will omit question 7.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

SATURDAY, MARCH 30TH, 1889:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. From a point without the circumference of a circle draw a tangent to the circle.

2. Draw the cycloid generated by a circle of 1 in. radius.

3. A pyramid has an hexagonal base of 1 in. side and an altitude of 3 in. Draw the plan and elevation (*a*) when on one side, with the axis parallel to the vertical (*b*). When the plan of the axis makes an angle of 45° with the vertical.

4. Find the section of the pyramid in question (3), caused by a plane meeting one of the sides, along a line parallel to the base, at 1 in. from the apex; and passing to the opposite side at 2 in. from the apex (*a*). Show the development of the sides of the pyramid with the section line.

5. Two cylinders having diameters of 1 in. and 1-2 in., respectively, meet so that their axes intersect at an angle of 60°. Show the curve of penetration and develop the surface of the larger cylinder.

6. The traces of a plane make angles of 45° with xy. Draw a line perpendicular to the plane and find a point in the line 1 in. from the plane. (*a*) Draw the traces of the plane containing the point and being parallel to the given plane.

7. Given the traces of two intersecting planes, as on the blackboard, draw the projection of their common section line and determine the angle between the planes.

FIRST YEAR.

FREEHAND DRAWING.

FRIDAY, MARCH 29TH:—9 TO 12.

Examiners,..... { C. H. MCLEOD. / A. T. TAYLOR.

1. Draw from the flat, a copy of the ornament exhibited, reduced to about one-quarter size.

2. Make a drawing of the group comprising a skeleton cube and a ring.

3. Make a drawing of the pattern for a pillow block.

GEOMETRY OF MACHINERY.

SATURDAY, JAN. 12TH, 1889:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA. E.

1. Determine the ratio between the *angular* velocities of a crank and its connecting rod, at any instant. (*a*). When is the velocity of the cross-head end of the rod at a maximum? Why?

2. Show how Whitworth applied the crank and slotted lever to obtain a quick return in his shaping machine. (*a*) Obtain the velocity ratio for the crank and lever, and show how to represent this graphically.

3. Show that the Peaucellier cell may be applied to obtain a straight line motion, and show how to obtain a second parallel point.

4. In an epicyclic train of three equal bevil wheels, the first and las wheels are on the same axis. The first wheel turns twice per second and the arm turns once in three seconds in a direction opposite to the first wheel. How many turns per second does the last wheel make? (*a*). How would you drive the arm of this train, and arrange for a variable velocity in the last wheel?

5. Show that a pair of equal ellipses may be made to work in rolling contact.

6. Find the radius of a linear screw. The radius of the cylindrical surface is 2 inches, and the pitch of the screw one inch.

7. Four lines which are drawn from the axis to the pitch line of a non-circular wheel, and separated by angular distances of 10°, measure respectively 2 in., 2.5 in., 3 in., and 3.5 in. Find approximately the axis and pitch line of a portion of another wheel, which shall turn in rolling contact with the first and shall subtend an angle of 45°

8. Apply the arithmetical method given by Rankine to obtain an approximate train of three axes, for the ratio 355 : 231.

9. There are two screw wheels in gear, the axis of which when projected on a plain parallel to both make an angle of 60°. The velocity ratio is $\frac{1}{2}$. Draw the projection of the line of contact, and determine the proportions which the surface velocities bear to their common component; and the relative extent of transverse sliding.

10. Given a pair of pitch circles upon which it is required to place teeth What are the necessary conditions, in order that the velocity ratio may be constant. Prove this (*a*), what is the extent of the sliding motion between two teeth.

SECOND AND THIRD YEARS.

MOULDING AND FOUNDING.

SATURDAY, DEC. 15TH:—9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E

1. Describe, briefly, the sands and other materials used in moulding, and explain the use of each.

2. Describe, in detail, the moulding of a spur-wheel.

3. Discuss, generally, the materials used for and in connection with cores Explain the construction and uses of cores in sand moulding.

4. Describe carefully the moulding of a large pipe.

5. How is the box for a chilled car-wheel formed?

6. Give an example of casting with "thickness," and explain briefly the method of forming the mould.

7. Describe a foundry cupola. Illustrate it by sketch.

8. How is iron affected by each of the following ingredients?—(*a*) Sulphur, (*b*) Carbon, (*c*) Phosphorus, (*d*) Copper. What proportions of (*a*), (*b*) and (*c*) are admissible in engineering castings

9. How are malleable castings made?

NOTE:—In addition to passing on this paper, Students are to prepare a descriptive essay on the fittings, and methods of carrying on the work of a foundry. Preferably a description of a well equipped foundry.

FIRST YEAR.

CHEMISTRY.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, B.A., Ph.D.
{ NEVIL N. EVANS, B.A. Sc.

1. How is common Phosphorus prepared? How converted into Red Phosphorus? Enumerate the principal points of difference between these two forms.

2. How may Sulphurous Anhydride be prepared? What are its properties?

3. Briefly describe the more important tests for the detection of Arsenic. In cases of poisoning with Arsenious Anhydride, what is the best antidote?

4. The water from a Lead tank 2 m. by 1½ m. by 1 m., gave on evapora-

tion with Sulphuric Acid 45 grams of Lead Sulphate. What percentage of Lead was present in the water?

5. By what tests may Iodine be detected when free and when in combination?

6. Give the more important reactions for the detection of Copper, Zinc, Manganese, Calcium and Magnesium.

7. Explain the relation between the Marsh Gas series of Hydrocarbons, the Primary Alcohols and the Fatty Acids.

8. On the supposition that 94 p.c. of Dextrose is converted into Alcohol and Carbon Dioxide by fermentation, what quantities of these bodies would be produced by the fermentation of 1 kilogram of Dextrose?

9. Explain the continuous Etherification process, giving equations.

10. How much Silver Nitrate corresponds to 1 gram of Silver? How much Green Vitriol to 1 kilogram of Iron?

SECOND YEAR (*Mining Course*).

CHEMISTRY.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. What takes place when a solution of Potassium Iodide is heated with one of Ferric Chloride? Give the equation.

2. Explain the separation of Nickel and Cobalt by means of Potassium Cyanide.

3. What takes place when Mercurous Chloride is treated with Ammonia Water? Give the equation.

4. How may Nitrates be detected in presence of Chlorates?

5. What takes place when Ammonium Sulphide is added to a solution of common Alum? Give the equation.

6. Describe the analysis of a specimen of Fahl Ore.

7. Explain the use of the match-splinter in qualitative analysis.

8. Name the metals of the Fifth and Sixth Groups, and describe their separation.

9. How much Carbon Dioxide can be obtained from a kilogram of Limestone containing 10 per cent. of Magnesium Carbonate?

10. What proportion of Silver is contained in an Alloy, one grain of which after solution in Nitric Acid, gave with Sodium Chloride a precipitate weighing 1.06296 grm.

THIRD YEAR (*Chemistry Course*).

CHEMISTRY.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. How is Cyanogen prepared? Give its properties. What takes place when it is passed into a solution of Caustic Potash?

2. Explain the action of Cyanides as reducing agents.

3. What takes place when dry Chlorine gas is passed over melted Urea? Give the equation.

4. Explain the detection and distinction of the Starches by means of the microscope.

5. Describe the preparation and properties of Dextrin, and name its different modifications.

6. What is Collodion? How is it prepared and what are its uses?

7. State what you know with regard to the chemical properties of Milk Sugar. What are the chief chemical differences between it and Sucrose

8. What are Glucosides? Name some of the more important ones and describe their properties.

9. State what you know with regard to the properties of Morphine and Caffeine. What takes place when the latter is heated with Soda-lime?

10. State briefly the nature and uses of Schweitzer's reagent, Frœhde's reagent, Mayer's solution.

THIRD YEAR (*Chemistry Course.*)

PRACTICAL CHEMISTRY.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. State what you know with regard to the estimation of Water and Carbon Dioxide in Silicates.

2. How would you estimate the proportion of Ferrous Oxide (*a*) in a specimen of Magnetite and (*b*) in an insoluble Silicate?

3. It required 0.25 grm. of Ammonium Oxalate to precipitate the Lime from a litre of Water. How many degrees of Hardness had the Water?

4. How would you determine the proportions of Carbonate and Caustic Alkali in a sample of Soda Ash?

5. Point out the principal sources of error in the separation of Iron from Manganese and Lime from Magnesia.

6. How may the proportion of Sugar in milk be estimated by means of the polariscope?

7. How much Cane Sugar is present in one litre of a solution which with a 2 decimeter tube gives a rotation of 8° 30′?

8. Describe Reichert's distillation process as employed in the examination of Butter.

9. How would you make a proximate analysis of a specimen of Coal?

10. In estimating the Sulphur in a Coal, one gram. of the fuel was employed, and the Barim Sulphate weighed 0.25 grm. What percentage of Sulphur was there in the Coal?

11. The Silver Chloride obtained from 1 grm. of an alloy of Silver and Copper weighed 1.19584 grm. In what proportions were the metals present in the alloy?

EXAMINATION FOR B.A.Sc., *(Chemistry Course.)*

CHEMISTRY.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. A monobasic acid gave on analysis Carbon 79.61, Hydrogen 13.48, Oxygen 6.91 per cent. Its Silver salt was found to contain 19.3 per cent. of Silver. From these data deduce the molecular weight and formula of the acid.

2. Find the vapour density of Carbon Bisulphide (by V. & C. Meyer's method) from the following data:—

S = 0.495 grm. V = 16.4 c.c. $t = 16°5$

B = 717.8 mm. w = 14.74 mm.

3. Explain the constitution of Basic Salts, giving a number of examples.

4. State what you know with regard to the constitution of the natural Silicates.

5. Give two methods for the estimation of Alkalies in insoluble silicates.

6. How would you estimate (*a*) Manganese in an Iron Ore, (*b*) Ferrous Oxide in an insoluble Silicate?

7. Describe Kjeldahl's method for the estimation of Nitrogen, pointing out any sources of error in the method.

8. State what you know with regard to the estimation of Fat and Sugar in Milk.

9. What are Tannins? Explain the constitution of Gallo-tannin.

10. State briefly the nature and origin of each of the following:—Inosite, Galactose, Inulin, Acrolein, Tyrotoxicon.

11. What are the more important general re-agents for the Vegeto-Alkaloids?

12. Name the principal Strychnos and Cinchona Alkaloids, and describe one member of each group.

EXAMINATION FOR B.A. Sc. (*Courses in Mining and Mechanical Engineering*).

METALLURGY.

THURSDAY, APRIL 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D

1. Give a classification of the processes involved in the reduction of metals from their ores, stating briefly the nature of each.

2. What are the objects of calcining Iron Ores? How is the calcination effected?

3. Describe the more important methods for raising the charges to the top of blast furnaces in Iron smelting. Give drawings.

4. Point out the advantages of a hot blast in Iron smelting, and state what you know with regard to the methods of heating the blast and the temperatures generally attained.

5. What objections are there to the employment of Titanic Iron Ore as a source of Iron? Why are Bog Iron Ores as a rule easily reduced?

6. State what you know with regard to the effect of Phosphorus, Sulphur and Silicon (*a*) upon Cast Iron and (*b*) upon Wrought Iron.

7. Explain the classification of Pig Iron for commercial purposes. What points are to be noted in judging of the quality of Pig Iron from its fracture?

8. Classify the methods for the production of Steel, and describe one method.

9. Describe any method for the extraction of Silver from Argentiferous Copper mattes.

10. Explain the principles of Pan Amalgamation.

11. Explain the chemistry of the more important processes for the extraction of Copper in the wet way.

12. Describe Parkes' process for the desilverization of Lead.

13. From what ores is Zinc obtained? Name the more important methods for its extraction, and describe one of them.

FACULTY OF MEDICINE.

MATRICULATION EXAMINATIONS.

LATIN.

Time allowed, 2 hours;

Examiner,..... .....H. Aspinwall Howe, M.A., LL.D.

Note.—Candidates may choose, in this Paper, between Cicero and Virgil.

1.—Translate, *without unnecessary change of construction*:—

Cicero.

(A.) III. Dixi ego idem in senatu, cædem te optimatium contulisse in ante diem v. Kalendas Novembris, tum quum multi principes civitatis Roma non tam sui conservandi, quam tuorum consiliorum reprimendorum caussa profugerunt. Num infitiari potes te illo ipso die, meis præsidiis, mea diligentia circumclusum, commoverse te contra rempublicam non potuisse, quum tu, discessu ceterorum, nostra tamen, qui remansissemus, cæde contentum te esse dicebas? Quid? quum tute Præneste Kalendis ipsis Novembribus occupaturum nocturno impetu esse confideres, sensistine illam coloniam meo jussu præsidiis, custodiis vigiliisque esse munitam? Nihil agis, nihil moliris, nihil cogitas, quod ego non modo non audiam, sed etiam non videam planeque sentiam.

(B.) XIII. Hisce ominibus, Catilina, cum summa republicæ salute; cum tua peste ac pernicie, cumque eorum exitio, qui se tecum omni scelere parricidioque junxerunt, proficiscere ad impium bellum ac nefarium. Tum tu, Jupiter, qui iisdem, quibus hæc urbs, auspiciis a Romulo es constitutus; quem Statorem hujus urbis atque imperii vere nominamus: hunc et hujus socios a tuis aris ceterisque templis, a tectis Urbis ac mœnibus, a vita fortunisque civium omnium arcebis, et homines bonorum inimicos, hostes patriæ, latrones Italiæ, scelerum fœdere inter se ac nefaria societate conjunctos, æternis suppliciis vivos mortuosque mactabis.

In Catilinam, Orat. I.

N.B.—*In order to pass, Candidates must shew, by their answers to the following questions, that they know the Grammar of the language*:—

2. Parse and give the construction of each word of:—"a tectis Urbis ac mœnibus, a vita fortunisque civium omnium arcebis."

3. Decline together, in both numbers, *illo ipso die*, and also *rempublicam*. Write out the tenses *potes* and *moliris*.

4. Give the principal parts of the verbs to which belong *contulisse*, *reprimendorum*, *confideres*, *proficiscere*, *conjunctos*.

5. In the following:—

(*a*) In ante diem V *Kalendas* Novembris. What were respectively the Kalends, Nones and Ides, and why were they so called?

(*b*) Non tam *sui conservandi* causa. Explain this genitive construction.

(*c*) Nostra tamen, *qui* remansissemus cœde. What is the antecedent to qui?

6. Give the derivation of *pernicies, parricidium, tectum, mœnia;* and distinguish between *inimicus* and *hostes; scelus* and *nefas.*

VIRGIL.

Time allowed, 2 *Hours.*

1. Translate, *without unnecessary change of construction* :—

(A.) Talia flammato secum dea corde volutans,
Nimborum in patriam, loca feta furentibus austris,
Æoliam venit. Hic vasto rex Æolus antro
Luctantes ventos tempestatesque sonoras
Imperio premit, ac vinclis et carcere frenat.
Illi indignantes magno cum murmure montis
Circum claustra fremunt: celsa sedet Æolus arce
Sceptra tenens, mollitque animos, et temperat iras.
Ni faciat, maria ac terras cœlumque profundum
Quippe ferant rapidi secum verrantque per auras.
Sed pater omnipotens speluncis abdidit atris,
Hoc metuens: molemque et montes insuper altos
Imposuit, regemque dedit, qui fœdere certo
Et premere, et laxas sciret dare jussus habenas.
Ad quem tum Juno supplex his vocibus usa est:

ÆNEID, Bk. 1., vss. 50-63.

(B.) Ipsa sed in somnis inhumati venit imago
Conjugis; ora modis attollens pallida miris,
Crudeles aras trajectaque pectora ferro
Nudavit, cæcumque domus scelus omne retexit.
Tum celerare fugam patriaque excedere suadet.
Auxiliumque viæ veteres tellure recludit
Thesauros, ignotum argenti pondus et auri.
His commota fugam Dido sociosque parabat.
Conveniunt, quibus aut odium crudele tyranni
Aut motus acer erat; naves, quæ forte paratæ,
Corripiunt, onerantque auro. Portantur avari
Pygmalionis opes pelago; dux femina facti.

ÆNEID, Bk. 1., vss. 353-364.

N.B.—*In order to pass, Candidates must shew, by their answers to the following questions, that they know the grammar of the language* :—

2. Parse and give the construction of each word of :—"Nimborum in patriam, loca feta furentibus Austris, Æoliam venit."

3. Decline together, in both numbers, *ipsa imago*, and also *scelus omne.* Write out the tenses *retexit* and *recludit.*

4. Give the principal parts of the verbs to which belong *sedet, mollit, imposuit, trajecta, retexit.*

5. In the following :—

(*a*) Secum dea corde *volutans.* To what class of verbs does *voluto* belong? How are such verbs formed?

(*b*) *His vocibus* usa est. What case is this and why?

(*c*) *Auxiliumque* viæ veteres..... *Thesauros.* Distinguish between the two accusatives.

6. Give the derivation of *vinclum, claustrum, inhumatus, conjux;* and distinguish between *aer, æther, aura; socius* and *comes.*

ENGLISH.

Time allowed, 1½ *hour.*

Examiner.....H. ASPINWALL HOWE, M.A., LL.D.

1. Divide the following stanza into separate sentences, and say how they are related to one another :—

Blow, *blow* thou winter *wind,*
Thou art not so unkind
As man's *ingratitude :*
Thy tooth is not *so* keen
Because thou *art* not *seen,*
Although thy breath *be* rude.

2. Parse the words indicated by *Italics* above.

3. How do you distinguish Prepositions, Conjunctions and Adverbs? Give examples of *But* used (*a*) as an adverb, (*b*) as a preposition, (*c*) as a conjunction.

4. In the sentence, "We *ought* to *own,* that what we *owe* is not our *own,*" explain with reference to their origin the words italicized.

5. The words *a* and *the,* formerly called *Articles,* are now classed among *Adjectives.* Give reasons for and against this change.

6. Correct errors, where found, in the following sentences, and give reasons for such corrections :—

(*a*) I was going to have written him a letter.

(*b*) You may take either of the three.

(*c*) Having failed in this attempt, no further trial was made.

7. Define the terms *root, stem, compound, derivative, cognate,* as applied to words. Analyse and derive the following words, noticing the force of each component part :—*Hillock, particle, streamlet, strength, martyrdom, chronicle, viscount.* Distinguish between *indices* and *indexes; depository* and *depositary; deprecate* and *depreciate.*

8. Write a short essay on "Memory."

9. Write legibly and punctuate properly the passage for *Dictation* which will be read to you.

GEOMETRY.

Time allowed, 1½ *hour.*

Examiner,..... H. ASPINWALL HOWE, M.A., LL.D.

1. If at a point in a straight line two other straight lines on opposite sides of it make the adjacent angles together equal to two right angles, these two straight lines shall be in one and the same straight line. Prop. 14, Bk. I.

2. If a side of a triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles. Prop. 32, Bk. I.

3. Describe a parallelogram which shall be equal to a given rectilineal figure, and have an angle equal to a given rectilineal angle. Prop. 45, Bk. I.

4. If a straight line be divided into two equal and also into two unequal parts, the rectangle under the unequal parts together with the square on the line between the points of section shall be equal to the square on half the bisected line. Prop. 5, Bk. II.

5. Shew from the preceding that the rectangle under the sum and difference of two lines is equal to the difference of their squares.

NATURAL PHILOSOPHY.

Time allowed, 1½ *hour.*

1. Shew that as the angle between two forces increases, the resultant is diminished. Two forces, 5 and 11, act on a point at right angles to one another; find the magnitude of the resultant.

2. Give examples of bodies in *stable*, *unstable*, and *neutral* equilibrium. If a body be in stable equilibrium, how is its centre of gravity affected by a small displacement of the body?

3. A carriage is being drawn by a rope up a smooth incline; if the rope breaks, why will the carriage continue to move up the incline for some distance? What considerations will determine this distance?

4. Describe an experiment showing that the pressure of water at any depth below the surface is exerted upwards as well as downwards.

5. Explain the phenomenon of *ebullition*. Why is it that all liquids do not boil at the same temperature, and why is the boiling point not always the same for the same liquid?

BRITISH HISTORY.

Time allowed, 1½ *hour.*

Examiner,..... H. ASPINWALL HOWE, M. A., LL.D.

1. Who were the Normans? What was their original home? In what respects was the Norman Conquest beneficial to England?

2. Name those sovereigns of England in whose reign political freedom made greatest advances. State circumstances.

3. Where were the causes that drove the Scotch into rebellion in the reign of Charles I. ?

4. Account for the population of the North of Ireland being mainly Protestant, and that of the South and West, Roman Catholic.

5. In what wars has England been engaged since the accession of Queen Victoria, and with what results ?

6. Write brief notes about the following persons and places, mentioning historical events connected with each:—Margaret of Anjou, John Knox, The Regent Murray, Titus Oates, Marlborough; Bretigni, Flodden, Glencoe, Vittoria, Cawnpore.

GEOGRAPHY.

Time allowed, 1½ *hour*.

1. Describe geographically the voyage, by water throughout, from Liverpool to Chicago.

2. Draw a sketch map of South Africa, outlining the different States. Describe the region briefly. Name those parts which belong to Britain.

3. What countries border on the Baltic Sea, the Black Sea, and the Caspian ? What rivers discharge into these respectively ?

4. What regions of the Earth are rainless, or nearly so, and which have an excess of rain ? Explain the cause of this difference.

5. What and where are Samoa, Oude, Bombay, Darien, Prague, Altai, Canso, Borneo, Baikal, Obi ?

CHEMISTRY.

Time allowed, 1½ *hour*.

Examiner,.....H. Aspinwall Howe, M.A., LL.D.

1. What is *superphosphate of lime*, and how is it prepared ?

2. Outline the process by which *Sulphuric Acid* is prepared.

3. Explain meanings of endings *ic* and *ous* in the names of acids, and endings *ite* and *ate* in names of salts.

4. What is the composition of "white arsenic" of the shops? How may arsenic be detected in Solution ?

5. Describe mode of preparations and properties of either *perchloride* or *nitrate* of iron.

BOTANY.

Time allowed, 1½ hour.

1. Give botanical names for structures represented by *onion, potato, tomato, thistle-down, flower of calla lily.*

2. Sketch a leaf designated as *round-heart-shaped, crenate, long-petioled.*

3. What is *placenta* of the *ovary?* Distinguish between *axile* and *parietal placentæ.*

4. Characterize *Gymnospermous* plants, citing an example from Canadian trees.

5. Plants are said to purify the air for animals. Explain this statement.

ARITHMETIC.

Time allowed, 1½ hour.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

NOTE.—The *work* must be given by which answers are obtained, in both the Arithmetic and the Algebra.

1. The value of a fraction is not changed when the numerator and denominator are multiplied or divided by the same number. Show this by reasoning with an example.

2. Add together $\frac{1}{5}$, $\frac{2}{3}$, $\frac{1}{35}$, and $\frac{5}{21}$. Then find what fraction the sum is of $1\frac{2}{3}$ of $\frac{4}{2\frac{7}{9}}$

3. What is a decimal fraction, and why so called? How many times can .027 be taken from 3.33, and what fraction of the former of these two is the remainder?

4. If £240 maintain 49 persons in bread for 20 months, when wheat is 48 shillings a quarter, how long will £234 supply 91 persons with bread when wheat is 56 shillings a quarter.

5. How many yards long is the side of a square which contains $2\frac{1}{2}$ acres of ground.

ALGEBRA.

Time allowed, 1½ hour.

If $x = 1, y = -2, z = 3$, what is the numerical value of

$$\tfrac{1}{2}\left[x - \tfrac{1}{3}\left\{y - \tfrac{1}{4}(z - x - 2y)\right\}\right]$$

2. Subtract $2a - 3(2b - 3c)$ from $4a - 3(b - 2a)$ and multiply $a^2 - ab + b^2$ by $a^2 + ab + b^2$.

3. Show that $1 - \dfrac{b^2 - c^2 + a^2}{2ab} = \dfrac{(a + c - b)(b + c - a)}{2ab}$

4. Solve the simultaneous equation

$$\left\{\begin{array}{l} \dfrac{x}{a}+\dfrac{y}{b}=2 \\ bx-ay=0 \end{array}\right\}$$

5. The denominator of a certain fraction exceeds the numerator by 2. If the numerator of the fraction be increased by 5, the value of the fraction will be increased by unity. Find the fraction.

GREEK.

Time allowed, 1½ hour.

NOTE.—Candidates may choose, in this Paper, between Xenophon and Homer.

XENOPHON.

1. Translate, *without unnecessary change of construction* :—

Ὁ δ Ὀρόντης νομίσας ἑταίμους εἶναι αὐτῳ τοὺς ἱππέας, γράφει ἐπιστολὴν παρὰ βασιλέα, ὅτι ἥξοι ἔχων ἱππεῖς ὡς ἂν δύνηται πλείστους, ἀλλὰ φράσαι τοῖε αὐτοῦ ἱππεῦσιν ἐκέλευεν ὡς φίλον αὐτὸν ὑποδέχεσθαι. Ἐνῆν δὲ ἐν τῇ ἐπιστολῇ καὶ τῆς πρόσθεν φιλίας ὑπομνήματα καὶ πίστεως. Ταύτην ἐπιστολὴν δίδωσι πιστῷ ἀνδρὶ, ὡς ὤετο· ὁ δὲ λαβὼν Κύρῳ δίδωσιν. Ἀναγνοὺς δέ αἰτὴν ὁ Κῦρος συλλαμβάνει Ὀρόντην, καὶ συγκαλεῖ εἰς τὴν ἑαυτοῦ σκηνὴν Περσῶν τοὺς ἀρίστους τῶν περὶ αἰτὸν ἑπτά· καὶ τοὺς τῶν Ἑλλήνων στρατηγοὺς ἐκέλευεν ὁπλίτας ἀγαγεῖν, τούτους δέ θέσθαι τὰ ὅπλα περὶ τὴν αὐτοῦ σκηνήν. Οἱ δὲ ταὐτα ἐποίησαν, αγαγόντες ὡς τρισχιλίους ὁπλίτας. Κλέαρχον δὲ καὶ εἴσω παρεκάλεσε σύμβουλον, ὃς γε καὶ αὐτῳ καὶ τοῖς ἄλλοις ἔδοκει προτιμηθῆναι μάλιστα τῶν Ἑλλήνων. Ἐπεὶ δ' ἐξῆλθεν, ἐξήγγειλε τοῖς φίλοις τὴν κρίσιν τοῦ Ὀρύτου ὡς ἐγένετο· οὐ γὰρ ἀπόρρητον ἦν. Ἔφη δὲ Κῦρον ἄρχειν τοῦ λόγου ὡ δε·

ANBASIS, BK. I., ch. 6, §§ 3, 4, 5.

2. Parse fully each word of :—Ταύτην τὴν ἐπιστολὴν. δίδωσι πιστῷ ἀνδρὶ ὡς ὤετο'.

3. Decline together in the three numbers, πιστῷ ἀνδρί ; and write out in full the tenses δίδωσι and παρνκάλεσε.

4. Give in the Indicative mood, the 1st person sing. of the Present, the Future, the Perfect, and the 1st or 2nd Aorist of the verbs to which belong δίδωσι, ἀναγναύς, συλλαμβάνει, θέσθαι, ἐξῆλθεν.

5. In the following :—

(*a*) ὅτι ἥξοι ἔχων ἱππεῖς....In what mood is ἥξοι, and why ?

(*b*) ἱππεῖς ὡς ἂν δύνηται πλείστους. Give the corresponding Latin ?

(*c*) προτιμηθῆναι μάλιστα. Give the Comparative and Superlative of this adverb.

6. What is the derivation of :—ἐπιστολή, ὑπόμνημα, στρατηγός, κρίσις, ἀπόρρητος.

HOMER.

Time allowed, 1½ *hour.*

1. Translate, *without unnecessary change of construction*:—

Οὐ γὰρ πάντων ἦεν ὁμὸς θρόος οὐδ' ἰα γῆρυς,
Ἀλλὰ γλῶσσ' ἐμέμικτο, πολίκλητοι δ' ἔσαν ἄνδρες,
Ὦρσε δὲ τοὺς μὲν Ἄρης, τοὺς δὲ γλαυκῶπις Ἀθήνη,
Δεῖμός τ' ἠδε φόβος καὶ ἔρις ἄμοτοι μεμανῖα,
Ἄρεος ἀνδροφόνοιο κασιγνήτη ἑταίρη τε,
Ἣ τ' ὀλίγη μὲν πρῶτα κορύσσεται, αὐτὰρ ἔπειτα
Οὐρανῷ ἐστήριξε κάρη καὶ ἐπὶ χθονὶ βαίνει.
Ἣ σφιν καὶ τότε νεῖκος ὁμοίϊον ἔμβαλε μέσσῳ
Ἐρχομένη καθ' ὅμιλον, ὀφέλλουσα στόνον ἀνδρῶν.
Οἱ δ' ὅτε δή ῥ' ἐς χῶρον ἕνα ξυνόντες ἵκοντο,
Σύν ῥ' ἔβαλον ῥινούς, σὺν δ' ἔγχεα καὶ μένε' ἀνδρῶν
Χαλκεοθωρήκων. ἀτὰρ ἀσπίδες ὀμφαλόεσσαι
Ἔπληντ' ἀλλήλῃσι· πολὺς δ' ὀρυμαγδὸς ὀρώρει.
Ἔνθα δ' ἅμ' οἰμωγή τε καὶ εὐχωλὴ τέλεν ἀνδρῶν
Ὀλλύντων τε καὶ ὀλλυμένων, ῥέε δ' αἵματι γαῖα.

ILIAD, Bk. IV. vss. 437–451.

2. Parse fully each word of the line:—

Οἱ δ' ὅτε δή ῥ' ἐς χῶρον ἕνα ξυνιόντες ἵκοντο,

3. Decline together in the three numbers πολύκλητοι ἄνδρες; and write out in full the tenses ἔμβαλε and ἵκοντο.

4. Give, in the Indicative mood, the 1st pers. sing. of the Present, the Future, the Perfect, and the 1st or 2nd Aorist of the verbs to which belong ἐμέμικτο, βαίνει, ἔμβαλε and ἵκοντο.

5. Write the Attic forms of ἔσαν, ἀνδροφόνοο, ἐμβαλε, ἀλληλῃσι, γαῖα.

6. What is the derivation of πολύκλητος, γλαυκῶπις, ἀνδροφονος, ὅμιλος, οἰμωγη.

FRENCH.

Time allowed, 1½ *hour.*

Examiner,.....H. ASPINVALL HOWE, M. A., LL. D.

1. Translate, *without unnecessary change of construction*:—

(A) A peine affermi sur le trône, il tenta une entreprise plus difficile que des conquêtes. Les veritables tyrans del'État étaient les évêques qui, ayant presque toutes les richesses de la Suède, s'en servaient pour opprimer les sujets, et pour faire la guerre aux rois. Cette puissance était d'autant plus terrible que l'ignorance les peuples l'avait rendue sacrée. Il punit la religion catholique des attentats de ses ministres; en moins de deux ans il rendit la Suède luthérienne, par la supériorité de sa

politique plus encore que par autorité. Ayant ainsi conquis ce royaume, comme il le disait, sur les Danois et sur le clergé, il régna heureux et absolu jusqu'à l'âge de soixante-et-dix ans, et mourut plein de gloire, laissant sur le trône sa famille et sa religion.

(B) Les Russes sont robustes, infatigables, peut-être aussi courageux que les Suédois ; mais c'est au temps à aguerrir les troupes, et à la discipline à les rendre invincibles. Les seuls régiments dont on peut espérer quelquechose étaient commandés par des officiers allemands ; mais ils étaient en petit nombre; le reste était des barbares arrachés à leurs forêts, couverts de peaux de bêtes sauvages, les uns armés de flèches, les autres de massues ; peu avaient des fusils, aucun n'avait vu un siège régulier ; il n'y avait pas un bon cannonier dans toute l'armée.

2. Parse the words of the first sentence of extract A.

3. *Ayant* presque toutes les richesses. When does the Present Participle of a Verb in French change for gender or number? Are *ayant* and *étant* subject to such change? Why or why not?

4. L'avaient *rendue sacrée*. Why are these Participles feminine? Give Rule for it.

5. Mais ils étaient en *petit* nombre. Give the Comparative and the Superlative of this adjective, and distinguish it from *peu*.

6. Et *mourut* plein de gloire. Write out the Present Indicative of this verb. Give also the Present Infinitive and the Present and Past Participles.

SESSIONAL EXAMINATIONS.

FIRST YEAR.

BOTANY.

Examiner, ... D. P. PENHALLOW, B.Sc.

1. Explain the structure of the ovum and spermatozoids, show in what they are produced, and compare their development in Pteridophytes and Angiosperms.

2. Explain the conditions essential to, and the products formed by constructive metabolism.

3. Explain the difference between Chlorophytes and Saprophytes, with reference to the appropriation of food and the metabolic products.

4. A tree is punctured and water is observed to flow from the opening. Show fully the cause of such movements, its relation to growth, and how it may be measured.

5. Show what elements constitute plant food, and how their value in this respect may be proved.

6. Give a statement of the conditions which determine the temperature of plants, and show to what extent the temperature produced in respiration is a factor.

HISTOLOGY.

Examiner,..... ..... Prof. G. Wilkins, M.D

1. *Describe* the crystals that may be obtained from blood. How can they be shown under the microscope?

2. Describe the glands opening into the mouth, and how the different varieties may be distinguished from one another.

3. Describe minutely the structure of the kidney.

4. Describe the retina.

PHYSIOLOGY.

Examiner,..... ..... T. Wesley Mills, M.A., M.D.

1. Compare, physiologically, plants and animals.

2. The circulation of the blood in mammals: (*a*) nature; (*b*) causes.

3. (*a*) Classify the food-stuffs of a meal consisting of beef-steak, potatoes, bread and apple-pie.

(*b*) State how and where these are digested.

4. The lungs: (*a*) structure; (*b*) functions, and the relations of the latter to the former.

5. Compare anatomically and physiologically the spinal cord and the brain.

6. Describe the series of processes involved in "seeing" an object, and describe the anatomical structures involved.

SECOND YEAR.

ANATOMY.

Examiner,..... ..... Prof. Shepherd, M.D.

(1) Name in proper order the various structures it is necessary to remove to expose the Hip-joint from in front.

(2) The Brain having been removed from the skull, describe the dissection necessary to expose the Third Ventricle. What are the boundaries of this ventricle?

(3) Give a short account of the Intrinsic Muscles of the Larynx, mentioning their actions, attachments, and nervous supply.

(4) Course and distribution of the Occipital Nerves and Artery.

(5) Stomach: Situation, relations, vascular and nervous supply.

(6) Describe the attachments, actions, vascular and nervous supply of the muscles in relation with the capsule of the Shoulder Joint.

Candidates are required to answer four questions only, including one of the first two.

PHYSIOLOGY.

Examiner,..... T. WESLEY MILLS, M.A., M.D.

1. Write on one page of foolscap paper 20 statements of fundamental importance in animal physiology.

2 Blood capillaries, lymphatics, blood, lymph and chyle. (*a*) Structure; (*b*) general chemical composition of the last three; (*c*) functional relations of all of them.

3. A man on running 200 yards to catch a street car after dinner has the following experiences: (*a*) Greatly accelerated pulse and respiration; (*b*) sense of increased warmth, with profuse perspiration; (*c*) imperfect digestion; (*d*) inability to work mentally as usual.

Explain the causes and relations of these phenomena.

4. What are the principal waste-products of the animal organism (mammal)? To what in the *ingesta* do they correspond? By what organs are they excreted? Explain the relations of the latter to each other.

5. What are the views usually taught in regard to "absorption" from the alimentary canal? Criticise them.

6. Discuss the relations of the cerebral cortex to the rest of the nervous system; and the general relations of the latter to the various vital processes.

7. Show that all the senses are subject to the same general laws, illustrating especially by vision.

8. Explain, as time permits, how embryology bears on physiology.

CHEMISTRY.

Examiner,.....G. P. GIRDWOOD, M.D.

1. The specific gravity of a sample of wax is 0.96; the weight of a piece is 15.432 grains. Describe the mode of taking the specific gravity thereof. What weight of lead of specific gravity 11.36 would be required?

2. Given any quantity of Zn, K, H, Cl, and O, how would you proceed to obtain Zinc Hydrate? Describe the operation, and show by equations the steps necessary.

3. Describe the properties of Phosphorus, and calculate the weight of 1 litre of phosphorus vapor at 400° C., normal pressure.

4. Compare fully the modes of preparation and properties of Carbon Dioxide and Sulphurous Anhydride.

5. How are Sulphur and Nitrogen distributed in nature? How may these elements be detected in organic compounds?

6. Give a brief account of the chemistry of the acids of Sulphur and Boron.

7. Arsenic and Antimony have properties and reactions which show that they are intermediate between the metallic and non-metallic elements. Discuss this fully.

8. Two substances each yield the following results to analysis; Carbon, 24.24 per cent.; Chlorine, 71.72 per cent.; Hydrogen, 4.04 per cent.; Vapor density (air = 1) = 3.43. Give the formulæ, and state how each may be prepared.

9. Classify (*a*) the Carbohydrates and (*b*) the Cyanides. Give the characteristics of each sub-group.

10. Describe two reactions that may be used to detect each of the following; (*a*) Prussic Acid; (*b*) Carbolic Acid; (*c*) Urea; (*d*) Ethyl Alcohol; (*e*) Oxalic Acid; (*f*) Acetic Acid; (*g*) Chloral Hydrate; (*h*) Mercuric Chloride; (*i*) Arsenious Oxide; (*j*) Lead Nitrate. Give equations wherever possible.

CHEMISTRY.

SUTHERLAND GOLD MEDAL.

Examiner,..... .....PROF. G. P. GIRDWOOD, M.D.

1. Show the relation existing between the three agencies,—light, heat, and electricity.

2. Give examples showing that mechanical division increases chemical activity.

3. The properties of the elements vary with their atomic weights; illustrate this.

4. Discuss the physical properties of the class of elements called metals. How is the atomic weight of a metal determined? How could you separate Ag, Hg, Cd, Fe, Zn, Ca and Mg, if present in the same solution.

5. How many litres of HCl gas at 0°C. and 760 m.m. are required to precipitate all the silver contained in a solution containing 340 grammes of silver nitrate? If 500 C.C. of Cl. at normal pressure and temp. are passed through ammonia in excess, and assuming all the Cl to be utilized, how many C. C. of N. will be liberated? How could you determine the formula of ammonia from these facts?

6. Show how the classes of organic compounds Alcohols, Ethers, Halogen Ethers and Mercaptans may be formed, and the relation which exists between these and the organic compounds called amines, their classification and mode of formation.

7. Write an account of the chemistry of glycerine and its chief derivatives.

8. Prove the formula for urea; by what reactions might it be prepared from ethyl alcohol?

9. Write a short essay on the chemistry of either (*a*) the urine, (*b*) digestion, or (*c*) respiration.

10. Give two methods for the preparation of each of the following: Oxalic acid, acetamide, ethylamine, diethylketone, and butyric acid.

THIRD YEAR.

PATHOLOGY.

Examiner,.....T. Wesley Mills, M.A., M.D.

1. Enumerate abnormalities in blood-distribution, and describe two of them.

2. Inflammation: (*a*) Phenomena. (*b*) Causes and relations. (*c*) Various modes of termination.

3. What various forms of tissue degeneration are generally recognized? Connect them by common features anatomical and pathological.

4. In the case of four dogs exposed to an infectious disease caused by a micro-organism, the following were the results: (*a*) One dog that had previously had the disease escaped a second attack; (*b*) one suffered little apparent diminution of vitality; (*c*) one escaped wholly; (*d*) one died. Discuss the above in the light of the pathology of the present.

5. Write as time permits on Tumors.

MEDICAL JURISPRUDENCE.

Examiner,.....Prof. Wilkins.

1. What do you understand by the term *cadaveric ecchymoses?* Explain their formation and where found; also their importance medico-legally. How would you distinguish them from bruises inflicted during life?

2. Explain the objections to the hydrostatic test of live birth.

3. Give some of the important symptoms of lead poisoning. Explain their absence in drinking *river* water, although conveyed through leaden pipes.

4. Describe General Paresis of the insane.

PHARMACOLOGY AND THERAPEUTICS.

Examiner,..... Prof. James Stewart, M.D.

1. Describe fully how the process of digestion may be influenced by alcohol, opium, quinine, strychnine, bicarbonate of potassium and hydrochloric acid—

(*a*) In small doses.
(*b*) In large doses.

2. Take any drug that has a distinct action when (*a*) applied locally to the skin or mucous membrane; (*b*) when absorbed into the blood; and (*c*) while being eliminated. Describe fully such action as the agent you choose may be possessed of, and write a prescription (metric system) for any use that can be made of—

(*a*) Its direct local action.
(*b*) Its internal action.
(*c*) Its remote local action.

3. In sleeplessness, the following agents have been shown to be of value, viz., Strychnine, Opium, Sulphonal and Electricity. Explain their mode of action, and point out in what particular forms of sleeplessness they are indicated.

How should they be administered?

4. Give a sketch of the dietetic treatment of Diabetes Mellitus and Acute Bright's Disease. Explain the reasons for adopting the form of diet you recommend.

5. In what conditions may stimulants of the respiratory centre prove useful? Write prescriptions for the uses you mention.

6. Explain the mode of action of alcohol, cold water and antipyrine in fever.

M.D. C.M., FINAL EXAMINATION.

PRINCIPLES AND PRACTICE OF SURGERY.

Examiners,..... { PROF. G. E. FENWICK, M.D.
PROF. F. BULLER, M.D., M.R.C.S.E.

1. To ligature the right common Carotid Artery, mention the structures to be cut through, the part of the vessel usually selected for the application of the ligature, and the relative position of contiguous structures to be avoided.

2. Trace the anterior Tibial Artery from its origin downwards. In wound of the vessel in the middle third of the leg, what structures would guide you in your search for it, and how would you arrest the hemorrhage?

3. Trace the descent of the bowel in Femoral Hernia. What structures does it acquire as its coverings? Where is the stricture situated in cases of strangulation, and what are the dangers to be avoided?

4. Mention the anatomical division of the Male Urethra. Describe the origin of stricture of this natural passage, and state where it is most commonly found.

5. Describe the dangers of Lateral Lithotomy, and how they are to be avoided.

6. Dislocation of the first phalanx of the thumb backwards, what gives rise to the difficulty in its reduction?

7. At what period of their course may burns prove fatal? Describe the causes of the fatality in each stage.

8. What is the object of carefully observing the temperature in patients after surgical operations?

What might a sudden rise or a marked fall in the temperature of the body indicate?

9. Describe an ordinary case of Sympathetic Ophthalmia, and state what you know concerning the causes, prevention and treatment of this disease.

10. Chronic Suppurative Otitis Media? State what you know of the dangers, complications, and treatment of this affection.

THEORY AND PRACTICE OF MEDICINE.

Examiner,.....PROF. R. P. HOWARD, M. D.

1. The diagnosis between Acute Articular Rheumatism and the diseases which may be confounded with it.

2. Describe the treatment of a severe case of Typhoid fever, attended with delirium and diarrhœa.

3. Enumerate the affections of the brain, heart, blood-vessels and eye which may result from chronic Bright's disease, and explain their production.

4. The forms of Acute Phthisis and the symptoms and signs indicative of each form?

5. Prescribe the dietetic and hygienic treatment of Gout, Diabetes Mellitus, and Chronic Interstitial Nephritis.

6. Relate the early symptoms suggestive of Tabes Dorsalis, Rickets, and Diabetes Mellitus.

7. Describe the morbid anatomy of Cerebral Syphilis and of Rheumatoid Arthritis.

8. The symptoms and course of acute yellow atrophy of the liver? The peculiarities of the urine in it?

9. The causes, clinical diagnosis and several consequences of Mitral Regurgitation?

10. An infant, while in its usual health, is suddenly seized with fever, vomiting, stupor and convulsions, which last two days, and then these symptoms gradually disappear, leaving the child aphasic and hemiplegic. What is the probable nature of the affection, and what evidences of the illness will be likely to exist a year later? What will be the condition of the paralyzed limbs then?

GYNÆCOLOGY.

Examiner,.....PROF. W. GARDNER, M.D.

1. Retroversion and Inversion of the Uterus? Symptoms, physical signs and diagnosis?

2. Reflex and Systemic disturbances attendant on Chronic Metritis?

3 Myoma Uteri? Varieties, symptoms and physical signs?

4. Ovarian Tumors? Symptoms and the more common complications and accidents?

OBSTETRICS AND DISEASES OF INFANCY.

Examiner,.....PROF. J. C. CAMERON, M.D.

1. Describe fully the management of the *third stage* of labor, giving your reasons for the various manœuvres recommended.

2. When is the *premature induction of labor* indicated? What are the relative merits of the methods proposed by *Krause*, *Cohen*, *Kiwisch* and *Barnes*?

3. How would you perform *combined pelvic version*, and when would you prefer this to the *high forceps* operation?

4. During gestation a primipara suffers considerably from nausea, loss of appetite, constipation and palpitation. Labor is tedious, and several vaginal abrasions occur, together with laceration of the perineum to the second degree. Convalescence proceeds favorably till the evening of the third day, when there is a severe chill with rise of pulse and temperature. Describe fully your treatment for such a case.

5. How would you treat—(*a*) Umbilical hemorrhage?

(*b*) Congenital hernia?

(*c*) Talipes equino varus in an infant?

FACULTY OF LAW.

FACULTY OF LAW.

COMMERCIAL SALES AND INTERNATIONAL LAW.

APRIL 20TH:—3 TO 5 P.M.

Examiner,..... .....N. W. TRENHOLME, D.C.L.

1. When are contracts formed by correspondence perfected?

2. When is the memorandum in writing required by the 17th Section of the Statute of Frauds necessary, and for what purpose; and indicate any difference between English Law and our Law on this subject.

3. In what cases can the seller give a good title to a thing of which he is not the owner?

4. When does the property pass by the contract of sale alone without delivery, and when not?

5. Explain the different remedies which the unpaid vendor has in our law in case of the failure of the buyer to perform his contract, and in case of his insolvency, and the conditions under which they may be exercised.

6. What is International Law, public and private, and give some account of its sources and authority.

7. What four rules on Maritime Law were agreed to at the Treaty of Paris of 1856, and indicate in what respect these rules were declaratory of, and in what respect they changed the previously existing rules?

8. State the rules laid down by our Code governing the application of: 1. the *lex fori*; 2. lex domicilii; 3. lex loci contractus; 4 lex rei sitæ.

9. A French man, domiciled in England, marrried an English woman there, and after living there for several years came to this province where they made their home, and acquired property, real and personal. On the death of the wife, her heirs claimed community of property. Could they do so, there being no community of property by the law of England.

CIVIL PROCEDURE.

SATURDAY, 6TH APRIL, 1889:—AFTERNOON, 3 TO 5.

Examiner,..... PROFESSOR MCGOUN.

1. What are the different classes of Preliminary exceptions? Describe briefly the nature of each. Within what delay and with what special formality are they filed?

2. What is the difference between simple warranty and real warranty?

3. When security for costs has been ordered, when does the delay for pleading begin to run, (*a*) for preliminary pleas, (*b*) for pleas to the merits?

4. Define exceptions temporary and perpetual, and distinguish them from other pleas.

5. What is a demurrer? Where several pleas are filed raising issues of fact affirmatively and negatively, and issues of law alone, in what order should they be pleaded?

6. What is the difference between a dilatory exception and a temporary peremptory exception? Which would be pleaded to an action on a note not matured? In what cases could an action on such a note be maintained?

7. Should prescription be pleaded by exception or demurrer? Are there any cases in which the opposite rule prevails?

8. What is the law and what the practice as to the proof of facts denied only by a general denial?

9. When must an affidavit be filed with a plea?

10. How can an outsider be made party to a suit (*a*) if he desires to intervene, (*b*) if any of the parties to the suit require his presence?

11. What are the powers of the attorney of record as to making *desistement* or *retraxit* from a demand, and from a judgment respectively?

12. When can husband or wife be examined as a witness in a suit in which the other consort is a party? Can the examination take place on behalf of the other consort, or only on behalf of the adverse party?

13. On what can any witness refuse to testify? On what, in addition, can a professional witness refuse? and to what professions does this privilege extend?

14. In what cases can trial by jury in civil cases be demanded?

15. What in general are the qualifications of jurors in Civil cases?

16. What are the remedies against an adverse verdict? Before what Court are they sought?

17. What is distraction of costs? Do costs bear interest?

CIVIL PROCEDURE.

Examiner,..... ....PROFESSOR LAREAU.

1. How Privileges upon moveable property are ranked.
Comment s'établissent les privilèges sur les meubles.

2. Hypothec. Define. How many kinds? Define.
Hypothèque. Définissez. Combien d'espèces? Définissez.

3. What are the legal hypothecs? Define.
Quelles sont les hypothèques légales? Définissez.

4. What are the exceptions which may be set up by the holder to the hypothecary action?
Quelles sont les exceptions que le tiers détenteur peut apposer à l'action hypothécaire?

5. For what causes may the prescription be interrupted?

Pour quelles causes la prescription peut-elle être interrompue?

6. What are the causes which suspend the course of prescription?
Quelles sont les causes qui suspendent le cours de la prescription?

7. What actions are prescribed by ten years?
Quelles sont les poursuites qui se prescrivent par dix ans?

8. How does the prescription of moveables take place
Comment s'acquiert la prescription des meubles?

9. Who are the persons liable to be imprisoned in civil cases?
Quelles sont les personnes qui peuvent être emprisonnées civilement?

N.B.—Students competing for the medal will answer the whole; those not competing will answer the six first questions.

Les élèves qui concourent pour la médaille répondront à toutes les questions; ceux qui ne concourent pas répondront aux six premières questions.

CIVIL LAW.

FRIDAY, DEC. 21ST, 1888:—AFTERNOON, 2 TO 4.

Examiner,.....THOMAS FORTIN, Assistant Professor.

1. What is meant by succession? How many kinds are there? When do they respectively take place?

2. What is representation? When does it take place? How is the succession divided in case of representation?

3. To whom does the *ab intestate* succession devolve? In what order?

4. What is benefit of inventory? What are the effects of acceptance under benefit of inventory?

5. When may partition be demanded? How can it be made? Who can demand it?

6. Who is bound to return? What things must be returned? How is return made?

Quid if moveables have perished by fortuitous event before the return?

Quid of immoveables, in the same case?

7. What is *retrait successoral?* What persons may exercise the same?

8. By whom are the debts of a succession paid? In what proportion is each heir bound to contribute to the payment of debts?

9. What is separation of property—*séparation des patrimoines?* Who can demand it? Within what delay must the demand be made?

10. What are the effects of partition? What warranty exists in favor of co-partitioners?

11. What are the effects of partition as to encumbrances imposed upon immoveables during the undivided state of ownership?

12. When may rescision of a partition be demanded? For what causes can it be demanded?

CRIMINAL LAW.

Examiner,.....PROFESSOR ARCHIBALD.

1. From what sources is derived the criminal law in force in this country?

2. What is the nature and degree of mental weakness which will exempt from criminal responsibility; what do you understand by moral insanity, and can it be pleaded as an excuse for criminal action?

3. Define accessories before and after the fact, and enumerate the crimes in which there can be no accessories.

4. Define conspiracy, burglary, arson and larceny.

5. A goes to B, and represents that he is a man of wealth, and lives in a certain place, and asks for an advance of money from B. B knows this to be false, yet, nevertheless, advances the money, intending to punish A. Is A guilty of the offence of obtaining money by false pretences? Give reasons for your opinion. If not, could he be indicted for any and what offence?

6. Describe the proceedings upon a preliminary investigation for criminal offence before a Magistrate?

7. Describe the method of preparing the rolls of Grand and Petit jurors.

8. Describe the proceedings at a trial for felony, not capital.

9. What are the remedies after verdict, and under what circumstances does each apply

10. A, being indicted for embezzlement, it appeared that he was employed to solicit orders, and paid by commission on the sums received, which sums he was forthwith to hand over to his employers; he was at liberty to apply for orders when he thought most convenient, and was not to employ himself for any other person. He received money for his employer in virtue of his employment and converted it to his own use. Should he be convicted? Give reasons for your opinion. Reg. Negus 42 L.J.M.C. 62.

11. A person delivered two brooches to the prisoner, to sell for him at £200 for one and £115 for the other, and he was to have them for a week for that purpose, but two or three days grace might be allowed. After ten days had elapsed he sold them with other jewellery for £250, but arranged with the vendee that he might redeem the brooches for £110 before September; what offence, if any, was committed? Give reasons for your opinion. 11 Cox C.C., 593.

12. A and B agree together to assault C with their fists, and C is killed by a chance blow of the fists of either of them. Are they both guilty of manslaughter? If so, why? Would it make any difference as to the responsibility of B if A had during the assault, of his own impulse, suddenly caught up a weapon and killed C with it? If so, why? Reg. *vs.* Caton, 12 Cox C.C., 624.

OBLIGATIONS—EVIDENCE—WILLS.

FRIDAY, APRIL 5TH:—3 TO 6 P.M.

Examiner, ...M. HUTCHINSON, D.C.L.

1. What do you understand by the essence, nature and accidents of contracts? Give illustrations of each.

2. A Toronto merchant sends by post an offer of sale of certain goods to a Montreal man, who, immediately on receipt of the letter, accepts and posts for Toronto his letter of acceptance. Two hours after he has posted his letter of acceptance he receives a letter from the Toronto merchant, stating that he withdraws his offer. What is the effect of this withdrawal? Give reasons.

3. A person by marriage contract transfers his property by donation to his future wife, leaving himself without means to pay his creditors. Have the creditors any recourse against this property? If the property had been transferred to one of his creditors in payment of a debt, under what circumstances could the other creditors have this transfer set aside and the property brought back into the estate?

4. What is the leading distinction between obligations arising from contracts and those arising without any agreement between the parties, which are known as quasi-contracts?

5. If two men are engaged by the same company to render the same service, both of whom are exposed to the same risk and danger in connection with their work, and one of them is injured by the carelessness of the other employee, is the company liable? Give reasons.

6. What is an alternative obligation? If one of the things that constitute an alternative obligation perish or become impossible of fulfilment, what obligation remains upon the debtor? If both perish or become impossible of fulfilment, what then? How would it be if the debtor was in fault?

7. In what respects does an indivisible obligation differ from a joint and several obligation?

8. If a creditor of an indivisible obligation has left two heirs, and one of them has given a release to the debtor as far as concerns himself, will the debtor be liberated as against the other heir? Explain fully how such a release would affect the other heir.

9. Under what circumstances may a valid payment be made to a person who is not the actual creditor but who is an ostensible creditor? If the payment be made to a person who produces a forged authority as agent, what would be the effect of such payment? If the payment be made to an agent of the creditor who at the time of the payment is dead, what then?

10. What are the three different ways in which novation may take place? What is the principal difference between our law and the Roman Law with respect to novation?

11. A merchant receives an order by telephone for a bill of goods amounting to $250; the goods are delivered, but payment is afterwards refused, and the merchant is obliged to take suit. How can he make his proof? If it was a house that was so sold how could the seller prove the contract?

12. What persons can make a valid will under our law? Who can be witnesses to a will in the English form? Can a minor's property be disposed of by will?

UNIVERSITY SCHOOL EXAMINATIONS, 1889.

UNIVERSITY SCHOOL EXAMINATIONS, 1889.

PRELIMINARY SUBJECTS.

READING.

Others may dwell on the illustrious deeds of James as a warrior and a legislator; but I have delighted to view him merely as the companion of his fellowmen, the benefactor of the human heart, stooping from his high estate to sow the sweet flowers of poetry and song in the paths of common life. He was the first to cultivate the vigorous and hardy plant of Scottish genius, which has since become so prolific of the most wholesome and highly-flavored fruit. He carried with him into the sterner regions of the north all the fertilising arts of southern refinement. He did everything in his power to win his countrymen to the gay, the elegant, and gentle arts, which soften and refine the character of a people, and wreathe a grace round the loftiness of a proud and war-like spirit. He wrote many poems, which, unfortunately for the fulness of his fame, are now lost to the world; one, which is still preserved, called "Christ's Kirk of the Green," shows how diligently he had made himself acquainted with the rustic sports and pastimes which constitute such a source of kind and social feeling among the Scottish peasantry; and with what simple and happy humour he could enter into their enjoyments. He contributed greatly to improve the national music; and traces of his tender sentiment and elegant taste are said to exist in those witching airs, still piped among the wild mountains and lovely glens of Scotland. He has thus connected his image with whatever is most gracious and endearing in the national character; he has embalmed his memory in song, and floated his name to after ages in the rich streams of Scottish melody. The recollection of these things was kindling at my heart as I paced the silent scene of his imprisonment. I have visited Vaucluse with as much enthusiasm as a pilgrim would visit the shrine at Loretto; but I have never felt more poetical devotion than when contemplating the old tower and the little garden at Windsor, and musing over the romantic loves of the Lady Jane and the Royal Poet of Scotland.—WASHINGTON IRVING.

WRITING.

MONDAY, JUNE 3RD:—10.45 TO 11 A. M.

1. Write down (*a*) your name in full, (*b*) the date of your birth, (*c*) your post office address.

2. Write the first ten letters of the alphabet in small letters and the last ten letters of the alphabet in capitals.

3. Write down the following:—

"Once this soft turf, this rivulet's sands
Were trampled by a hurrying crowd,
And fiery hearts and armed hands
Encountered in the battle-cloud."

DICTATION.

MONDAY, JUNE 3RD:—MORNING, 10 TO 10.45.

I do not know a pleasure more affecting than to range at will over the deserted apartments of some fine old family mansion. The traces of extinct grandeur admit of a better passion than envy; and contemplations on the great and good, whom we fancy in succession to have been its inhabitants, weave for us illusions incompatible with the bustle of modern occupancy, and vanities of foolish present aristocracy. The same difference of feeling, I think, attends us between entering an empty and a crowded church. In the latter it is chance but some present human frailty—an act of inattention on the part of some of the auditory or a trait of affectation, or worse, vain glory, on that of the preacher, puts us by our best thoughts, disharmonizing the place and the occasion. But wouldst thou know the beauty of holiness, go alone on some week-day, borrowing the keys of good master Sexton, traverse the cool aisles of some country church, think of the piety that has kneeled there—the congregations, old and young, that have found consolation there, the meek pastor—the docile parishioner. With no disturbing emotions, no cross conflicting compari, sons, drink in the tranquility of the place, till thou thyself become as fixed and motionless as the marble effigies that kneel and weep around thee. Journeying northward lately, I could not resist going some few miles out of my road to look upon the remains of an old great house, with which I had been impressed in this way in infancy. I was apprised that the owner of it had lately pulled it down; still I had a vague notion that it could not all have perished, that so much solidity with magnificence could not have been crushed all at once into the mere dust and rubbish which I found it.

Why, every plank and panel of that house for me had magic in it, the tapestried bedroom, tapestry so much better than painting—not adorning

merely, but peopling the wainscot—at which childhood ever and anon would steal a look, shifting its coverlet (replaced as quickly) to exercise its tender courage in a momentary eye encounter with those stern bright visages, staring reciprocally.—*Charles Lamb.*

N.B.—The examiner will read the extract *three* times, the candidates writing it out during the *second* reading. The first and third readings are respectively intended to give the candidates a general idea of the character of the passage, and to guide them in punctuating. As it is of great importance that candidates should not be left in a state of uncertainty, the examiner may, if he thinks it necessary, repeat, on request, any word or phrase.

ENGLISH GRAMMAR.

MONDAY, JUNE 3RD:—AFTERNOON, 3.30 TO 5.

Examiners, ... { CHAS. E. MOYSE, B.A.; REV. PROF. SCARTH, M.A.; REV. PROF. ALLNATT, M.A.; PAUL T. LAFLEUR, M.A.

[Answer *six* questions, but do not take more than two from each of the groups (A) and (B). Group C must be attempted by all.]

A.

1. Write the possessive of John, geese, birds, father-in-law, Smith & Co., your; the superlative of the adjectives little, *good*, *much*; active, happy, *polite*. Classify the adjectives in italics.

2. Define Proper, Collective and Abstract nouns, and give one example of each. Give the plural of lash, gas, crisis, die, brother, potato, man-servant, valley, father-in-law.

3. Write one sentence illustrating the various uses of *that*, and define each. What name does your sentence bear in Analysis, and why?

Treat the word *but* similarly, and say what kind of sentence you have just written.

B.

1. What parts of speech do adverbs qualify? Frame one sentence to illustrate your answer and show that it does so. Form adverbs from bad need, shore, *one*, *second*, wry. Parse the words in italics.

2. Parse the following forms of the verb *smite*: I am smitten, we smote, we were smiting, you will be smiting, they will be smitten, (If) I smite, smite, having smitten, be smitten, *OR* give the present participle, past

tense (one person), and past participle of bleed, give, drive, swim, thrust lay, singe, rise, lie. Explain the terms intransitive, impersonal, weak, defective, as applied to verbs. Mention a verb of each kind.

3. What is the force of the prefixes and the suffixes in italics—paint*er*, spin*ster*, pay*ee*, lam*kin*, *gain*say, whit*ish*, *e*volve, stream*let*? State the accent distinguishing the verb from the adjective in the case of *separate*, and the verb from the noun in the case of *accent*, *refuse* and *compound*. Distinguish between *practice* and *practise*, *prophesy* and *prophecy*.

C.

1. Distinguish between the use of the adjective in:—The good man; the man is good. What is meant by compound subject, gerund, indirect object, nominative absolute, antecedent? Give an example of each.

Parse: I will show Mary my atlas if she fetches it now.

2. Parse the words in italics: He stood there *all day*; Cæsar, the *general*, commands this; *To die* is gain; It is *I*; He is taller than *you*.

Analyse: Tell me who lives in the house which we see.

ARITHMETIC.

MONDAY, JUNE 3RD:—AFTERNOON, 2 TO 3.30.

Examiners, ... { G. H. CHANDLER, M.A.
REV. R. TAMBS, M.A.
W. MORRIS, LL.B.

Only two questions from each division to be answered.

I

1. A block of stone is 2 yds. 1 ft. 3 ins. long, 1 ft. 7 in. broad, and 2 ft. thick; find in pounds, shillings and pence, its value at 2s. 3d. per cubic foot.

2. Add $3\frac{1}{2}$, $5\frac{1}{4}$, $2\frac{3}{7}$, multiply the sum by $\frac{5}{3}\frac{5}{1}\frac{5}{3}$, divide one half of the product by 2, and take $\frac{1}{4}$ from the quotient.

3. Divide .01 by .00001, and multiply the quotient by $.\dot{6}$.

II.

4. A gallon of water weighs 10 lbs. and a cubic foot of water weighs $62\frac{1}{2}$ lbs.; how many gallons are there in 748 cubic feet?

5. Two men A and B run a race, A gives B a start of 180 yds., but gains, on him at the rate of 2 ft. for every $1\frac{3}{5}$ yds. run by B; how much will A be in advance of B when the latter has run half a mile?

6. Find the simple interest on $243.80 for 2 yrs. 5 mos. at 8 per cent. per annum.

III.

7. Find the square root of 167.9616 and verify your result.

8. Find the present value of $780 due 3 mos. hence, interest being at 6 per cent. per annum.

9. If 4 men, 6 women, and 8 boys, could separatly do a certain piece of work in 56¼ hours; in what time could 1 man, 2 women, and 5 boys working together do it?

PRELIMINARY GEOGRAPHY.

MONDAY, JUNE 3RD:—MORNING, 9 TO 10.

Examiners,..... { REV. PROF. SCARTH, M.A.
REV. PROF. ALLNATT, M.A.
CHAS. MOYSE, B.A.
P. T. LAFLEUR, M.A.

[Answer the first three questions and any two from Divisions II. and III respectively.]

1. Define the following Terms: Peninsula, Longitude, Arctic Circle. Name all the zones of the earth beginning from the South.

2. Distinguish the Northern Hemisphere from the Southern Hemisphere. Name the boundary between them. How do they differ as regards distribution of Land and Water? Define antipodes and equinoxes.

3. Mention names characteristic of large level surfaces, some of universal, others of local use. Give examples,
What do you know of Tides, Trade-Winds and Icebergs?

II

4. Name the chief minerals found in Canada, and say in what provinces they are chiefly found.

5. Name the chief railways and canals of Canada and the chief steamship lines, stating how the winter course differs from the summer one in the case of the steamships.

6. Mention the great lakes in the basin of the St. Lawrence: mention an equal number of inland waters from other continents comparable to these in size.

III.

7. Give a list of the provinces of the Dominion (1) in order of population (2) in order of arangement from E. to W. (3) in order of joining the Confederation.

8. Name the four national divisions of the British Isles; the highest mountain and largest river and most populous city in each.

III.

9. Name all the islands in the world larger than Great Britain; any mountain ranges higher than the Rocky Mountains; name the three most populous empires in the world; the four most populous cities; the continent with the largest population, and the most populous continent.

BRITISH AND CANADIAN HISTORY.

TUESDAY, JUNE 4TH:—MORNING, 9 TO 10.30.

Examiners,..... { CHAS. E. MOYSE, B.A. / REV. PROF. SCARTH, M.A. / REV. PROF. ALLNATT, M.A. / P. T. LAFLEUR, M.A.

(Not more than *two* questions from each division are to be answered.)

I.

1. Give a short account of:—Roberval, Frontenac, de Vaudreuil, Joseph Brandt, Brock, William Lyon Mackenzie.

2. What do you know of the customs, religion, character, and distribution of the Indian tribes in Canada at the time of Cartier's voyages?

3. Give in outline, with dates, the principal events in the struggle between the English and the French, from Braddock's expedition to the taking of Quebec.

II.

1. Comment briefly upon:—Quebec Act, LaSalle, Sackett's Harbour Family Compact, Union Bill, Expulsion of the Acadians.

2. Write an account, *in outline*, of the reign of Alfred; *or*, of the reign of Henry the Seventh.

3. What is meant by "The Hundred Years' War"? State the causes and he leading encounters, give dates, name the chief actors, and give the final result of the struggle.

III

1. What were the nature and purpose of each of the following;—Constitutions of Clarendon, Statute of Mortmain, Hampton Court Conference, Habeas Corpus Act, Letters of Junius, Regency Bill. Give dates.

2. State why each of the following is an important name in English history:—Dunstan, Simon de Montfort, Francis Bacon, General Monk, Grahame of Claverhouse, Daniel O'Connell.

3. Sketch, with dates, the career of Oliver Cromwell; *or*, the history of paramentary reform in England.

THE GOSPELS.

MONDAY, JUNE 3RD:—MORNING, 11 TO 12.

[Only *five* questions are to be answered.]

1. Name in chronological order the events of our Lord's infancy.

2. Relate any two of the temptations with which our Lord was assailed in the wilderness, explaining their significance, and giving His answer.

3. Give an account of the miraculous circumstances of the Transfiguration, with their significance.

4. What charges were brought against our Saviour when arraigned (1) before the Council of Priests (2) before Pilate?
On what charge was he condemned by the former?

5. What circumstances took place at the moment of our Lord's Death? What was their meaning?

6. Give the situation of, and mention in some circumstance connected, with, each of the following:—Bethany, Bethesda, Bethsaida, Jericho, Emmaus, Cæsarea-Philippi, Sychar.

7. Mention either (1) the parables which deal with the subject of Prayer; or (2) those which teach the duty of mercy and good-will, in each case showing what special feature of the duty is exhibited.

OPTIONAL SUBJECTS.

LATIN.

TUESDAY, JUNE 4TH:—AFTERNOON, 2 TO 5.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
VERY REV. DEAN NORMAN, D.C.L.
A. J. EATON., M.A., Ph.D.

1. Translate, Aeneid, Bk. I.:—

(*a*) Aeneas scopulum interea conscendit, et omnem
prospectum late pelago petit. Anthea si quem
iactatum vento videat, Phrygiasque biremes,
aut Capyn, aut celsis in puppibus arma Caici.
Navem in conspectu nullam, tres litore cervos
prospicit errantes; hos tota armenta sequuntur
a tergo, et longum per valles pascitur agmen.
Constitit hic, arcumque manu celeresque sagittas
corripuit, fidus quae tela gerebat Achates;
ductoresque ipsos primum, capita alta ferentes
cornibus arboreis, sternit, tum vulgus; et omnem
miscet agens telis nemora inter frondea turbam.

(*b*) Olli subridens hominum sator atque deorum
vultu, quo caelum tempestatesque serenat,
oscula libavit natae; dehinc talia fatur:
"parce metu, Cytherea; manent immota tuorum
fata tibi; cernes urbem et promissa Lavini
moenia, sublimemque feres ad sidera caeli
magnanimum Aenean; neque me sententia vertit.
hic tibi—fabor enim, quando haec te cura remordet,
longius et volvens fatorum arcana movebo—
bellum ingens geret Italia, populosque feroces
contundet"

2. Explain the form *olli* and the construction of *parce metu*. Why was Venus called *Cytherea?*

3. Parse *geret, contundet, movebo, parce, cernes, sternit, petit*, giving the principal tenses in each case.

4. Derive *biremes, oscula, armenta, agmen*. Give the gender and declension of *vulgus, puppibus, urbi* and *arcum*.

1. Translate, Caesar, Gallic War, Bk. I.:—

(*a*) Tum demum Liscus *oratione* Caesaris adductus, quod antea tacuerat, proponit: *Esse* nonnullos, quorum auctoritas apud plebem plurimum valeat, qui privatim plus *possint* quam ipsi magistratus. Hos seditiosa atque improba oratione multitudinem deterrere, ne frumentum conferant, quod praestare *debeant:* si iam principatum Galliae obtinere non possint, Gallorum quam Romanorum imperia praeferre; neque dubitare, quin si Helvetios superaverint Romani, una cum reliqua Gallia *Aeduis* libertatem sint erepturi. Ab eisdem nostra consilia quaeque in castris gerantur hostibus enuntiari: hos a se coerceri non posse.

(*b*) Ita ancipiti proelio diu atque acriter pugnatum est. Diutius cum sustinere nostrorum impetus non possent, alteri se, ut coeperant, in montem receperunt, alteri ad impedimenta et carros suos se contulerunt. Nam hoc toto *proelio*, cum ab hora septima ad vesperum pugnatum sit, aversum hostem videre nemo potuit. Ad multam noctem etiam ad impedimenta pugnatum est, propterea quod pro vallo carros obiecerant et e loco superiore in nostros venientes tela coniciebant, et nonnulli inter carros rotasque mataras ac tragulas subiciebant, nostrosque vulnerabant.

2. Explain carefully the construction of *italicized* words in the above extracts.

3. (*a*) What is the subject of *conferant*, and why is the verb in the plural? (*b*) *alteri.....alteri:*—to what nations do these words refer? (*c*) Give the derivation of *ancipiti* and *impedimenta*.

4. Write out in direct narration the sentence *ab eisdem.....non posse*.

5. Translate, Cicero in Catilinam, Oratt. I. and II.:—

(*a*) Quid? Cum *te* Praeneste Kalendis ipsis Novembribus occupaturum nocturno *impetu* esse confideres, sensistine illam coloniam meo iussu prae-

sidiis custodiis vigiliis esse munitam? Nihil agis, nihil moliris, nihil cogitas, quod non ego non modo audiam, sed etiam videam planeque sentiam. Recognosce tandem mecum noctem illam superiorem; iam intelleges multo me vigilare acrius ad salutem quam *te* ad perniciem *rei publicae*. Dico te priore nocte venisse inter falcarios—non agam obscure—in M. Laecae domum; convenisse eodem *compluris* eiusdem amentiae scelerisque socios. Num negare audes? quid taces? convincam, si negas. Video enim esse hic in senatu quosdam, qui tecum una fuerunt.

(*b*) Quod exspectavi, iam sum adsecutus, ut vos omnes factam esse aperte coniurationem contra rem publicam videretis: nisi vero si quis est qui Catilinae similis cum Catilina sentire non putet. Non est iam *lenitati* locus: severitatem res ipsa flagitat. Unum etiam nunc concedam: *exeant*, proficiscantur; ne patiantur desiderio sui Catilinam miserum tabescere. Demonstrabo iter; Aurelia *via* profectus est: si adcelerare volent, ad vesperam consequentur.

6. (*a*) Give the principal parts of *confideres*, *agis*, *audes*, *convincam*. (*b*) To what class of verbs do *confido*, and *audes* belong? (*c*) Account for the construction of the words printed in *italics*, in the above extracts.

1. How many Declensions are there in Latin, and how are they distinguished?

2. Decline the following nouns:—(*a*) In the *Singular* and *Plural*:—pedes, auris, lepus, lepos, os (*both*); and pecus (*both*), giving the English for each. (*b*) In the *Singular* only:—Æneas, respublica, filius, jusjurandum, mos, quies. (*c*) In the *Plural* only:—vis, bos, mare, sal, grex, dea. (*d*) In *combination* with each other:—audax facinus, uterque consul.

3. (*a*) How many classes of Adjectives are there in Latin? (*b*) What is meant by *Comparison*? (*c*) Decline:—ingens, tristis, vetus, totus, redux. (*d*) Compare:—malus, dives, nequam, senex, juvenis, gracilis.

4. (*a*) Enumerate the classes of Pronouns in Latin, and give an example of each. (*b*) When do you use for the Genitive Plural, *nostrum—nostri*, *vestrum—vestri*? Which form is the true Plural?

5. Write down the Latin for 9, 9th, 9 each, 9 times.

6. Write down the *Perfect Indicative* (1st *Singular*), *Supine* and *Infinitive* of:—subvenio, placo, placeo, juvo, augeo, parco, pendo, edo (*both*), sero (*both*), audeo, fungor, and name the cases they severally take after them.

GREEK.

WEDNESDAY, JUNE 5TH :—AFTERNOON, 2 TO 5.

Examiners..... { REV. GEORGE CORNISH, LL.D.
VERY REV. DEAN NORMAN, D.C.L.
A. J. EATON., M.A., Ph.D.

1. Translate, Xenophon, Anabasis, Bk. I :—

(*a*) Ἄνδρες, ἐάν μοι πεισθῆτε, οὔτε κινδυνεύσαντες οὔτε πονήσαντες τῶν ἄλλων πλέον προτιμήσεσθε στρατιωτῶν ὑπὸ Κύρου. τί οὖν κελεύω ποιῆσαι; νῦν δεῖται Κῦρος ἐπεσθαι τοὺς Ἕλληνας ἐπὶ βασιλέα· ἐγὼ οὖν φημι ὑμᾶς χρῆναι διαβῆναι τὸν Εὐφράτην ποταμὸν πρὶν δῆλον εἶναι ὅ τι οἱ ἄλλοι Ἕλληνες ἀποκρινοῦνται Κύρῳ. Ἢν μὲν γὰρ ψηφίσωνται ἕπεσθαι, ὑμεῖς δόξετε αἴτιοι εἶναι ἀρξαντες τοῦ διαβαίνειν, καὶ ὡς προθυμοτάτοις οὖσιν ὑμῖν χάριν εἴσεται Κῦρος καὶ ἀποδώσει· ἐπίσταται δ' εἴ τις καὶ ἄλλος· ἢν δ' ἀποψηφίσωνται οἱ ἄλλοι ἀπιμεν μὲν ἅπαντες εἰς τοὔμπαλιν, ὑμῖν δὲ ὡς μόνοις πειθομένοις πιστοτάτοις χρήσεται καὶ [illegible]ς φρούρια καὶ εἰς λοχαγίας, καὶ ἄλλου οὑτινος ἂν δέησθε οἶδα ὅτι ὡς φίλου τεύξεσθε Κύρου.

(*b*) Κῦρος [illegible]ν οὖν οὕτως ἐτελεύτησεν, ἀνὴρ ὢν Περσῶν τῶν μετὰ Κῦρον τὸν ἀρχαῖον γενομένων βασιλικώτατός τε καὶ ἄρχειν ἀξιώτατος, ὡς παρὰ πάντων ὁμολογεῖται τῶν Κύρου δοκούντων ἐν πείρᾳ γενέσθαι. Πρῶτον μὲν γὰρ ἔτι παῖς ὤν, ὅτ' ἐπαιδεύετο καὶ σὺν τῷ ἀδελφῷ καὶ σὺν τοῖς ἄλλοις παισί, πάντων πάντα κράτιστος ἐνομίζετο. Πάντες γὰρ οἱ τῶν ἀρίστων Περσῶν παῖδες ἐπὶ ταῖς βασιλέως θύραις παιδεύονται· ἔνθα πολλὴν μὲν σωφροσύνην καταμάθοι ἂν τις, αἰσχρὸν δ' οὐδὲν οὔτ' ἀκοῦσαι οὔτ' ἰδεῖν ἔστι. Θεῶνται δ' οἱ παῖδες καὶ τοὺς τιμωμένους ὑπὸ βασιλέως καὶ ἀκούουσι, καὶ ἄλλους ἀτιμαζομένους· ὥστε εὐθὺς παῖδες ὄντες μανθάνουσιν ἄρχειν τε καὶ ἄρχεσθαι.

2. Explain the construction of τοῦ διαβαίνειν, in ext. (*a*). What does it resemble in Latin?

3. Give the principal tenses of μανθάνω, τυγχάνω, ἀκούω, ἰδεῖν.

4. What is the case and the force of πάντα in extract (*b*) before the word κράτιστος?

1. Translate, Homer, Iliad, Bk. IV. :—

(*a*) "Φίλε κασίγνητε, θνατόν νύ τοι ὄρκι' ἔταμνον,
Οἷον προστήσας πρὸ Ἀχαιῶν Τρωσὶ μάχεσθαι·
Ὥς σ' ἐβαλον Τρῶες, κατὰ δ' ὅρκια πιστὰ πάτησαν.
Οὐ μέν πως ἄλιον πέλει ὅρκιον αἱμά τε ἀρνῶν
Σπονδαί τ' ἀκρητοι καὶ δεξιαί, ἧς ἐπέπιθμεν.
Εἰ περ γάρ τε καὶ αὐτίκ' Ὀλύμπιος οὐκ ἐτέλεσσεν,
Ἕκ τε καὶ ὀψὲ τελεῖ, σύν τε μεγάλῳ ἀπέτισαν,
Σὺν σφῇσιν κεφαλῇόι γυναιξί τε καὶ τεκέεσσιν.

Εὖ γὰρ ἐγὼ τόδε οἶδα κατὰ φρένα καί κατὰ θυμόν·
Ἔσσεται ἦμαρ ὅτ' ἂν ποτ' ὀλώλῃ Ἴλιος ἱρὴ
Καὶ Πρίαμος καὶ λαὸς ἐϋμμελίω Πριάμοιο,
Ζεὺς δέ σφι Κρονίδης ὑψίζυγος, αἰθέρι ναίων,
Αὐτὸς ἐπισσείῃσιν ἐρεμνὴν αἰγίδα πᾶσιν
Τῆσδ' ἀπάτης κοτέων· τὰ μὲν ἔσσεται οὐκ ἀτέλεστα·

(*b*) Τὸν δ' ἄρ' ὑπόδρα ἰδὼν προσέφη κρατερὸς Διομήδης·
"Τέττα, σιωπῇ ἧσο, ἐμῷ δ' ἐπιπείθεο μύθῳ.
Οὐ γὰρ ἐγὼ νεμεσῶ Ἀγαμέμνονι ποιμένι λαῶν
Ὀτρύνοντι μάχεσθαι ἐϋκνήμιδας Ἀχαιούς·
Τούτῳ μὲν γὰρ κῦδος ἅμ' ἕψεται, εἴ κεν Ἀχαιοὶ
Τρῶας δηώσωσιν ἑλώσί τε Ἴλιον ἱρὴν,
Τούτῳ δ' αὖ μέγα πένθος Ἀχαιῶν δηωθέντων.
Ἀλλ' ἄγε δὴ καὶ νῶι μεδώμεθα θούριδος ἀλκῆς."

2. Divide the first two lines of ext. (*a*) into feet, marking the place of the principal caesura in each verse.

3. Write the Attic forms of *τοι, ἐτέλεσσε, κεφαλῇσι, τεκέεσσι, ἕλωι, ᾗς.*

4. From what present indicatives are *ἕψεται, ἕλωσι, δηωθέντων, ἔβαλον, ἐπέπιθμεν, τελεῖ, ἔσσεται, ὀλώλῃ* formed? Give the principal parts of *any four* of those.

5. State accurately the principles of Syntax that explain the following forms:—(*a*) in regard to case, *μυθῳ, ἀλκῆς, ᾗς, αἰθέρι*; (*b*) in regard to mood, *μάχεσθαι, μεδώμεθα, ὀλώλῃ*; (*c*) in regard to number, *ἔσσεται* (last line of ext. (*a*)).

1. (*a*) Compare the Greek with the Latin language in respect of Declensions, Cases, and Numbers. (*b*) What is the stem of a noun, and how do you find it? (*c*) Give the stems of:—*γύψ, κόραξ, παῖς, ὄρνις, γάλα, πούς.* (*d*) What is the force of the suffixes—*δε*,—*θεν*,—*φι*, and —*ι*?

2. Decline:—(*a*) In all numbers:—*βασιλεύς, βασίλεια, γόνυ, πολίτης, ἀγών, ἀνήρ.* (*b*) In the Singular only:—*χιών, λέων, λιμήν, ὀδούς, ὁδός.* (*c*) In the Plural only:—*γένος, βοῦς, λαγώς, φῶς, θρίξ.* (*d*) In combination in all numbers:—*ἡ μεγάλη χώρα.*

3. (*a*) Give one example of each class of Adjectives in Greek. (*b*) Compare:—*μέγας, μέλας, ἡδύς, αἰσχρός, εὐδαίμων, ταχύς.*

4. (*a*) Decline:—*αὐτός, οὗτος, οὐδείς, ὅστις.* (*b*) Distinguish between *τοιοῦτος* and *τοσοῦτος*. *οὐδείς* and *μηδείς*. *αὐτὸς ὁ ἀνὴρ* and *ὁ αὐτὸς ἀνήρ*. (*c*) What are the Greek words for *meus, tuus*, and *suus*?

5. Define the terms *Tense, Mood, Augment, Reduplication, Stem,* as applied to verbs. Write down the principal parts (1st *Sing.* only) of: —πείθω, τίθημι, πίπτω, ἕπομαι, ἵημι, φέρω, λείπω, βαίνω. What two verbs make ἄξω in the *Fut. Ind. Act.*, and what two have a *Future* πείσομαι?

FRENCH.

WEDNESDAY, JUNE 5TH:—10½ TO 12½.

Examiners,..... { PROF. P. J. DAREY, M.A., B.C.L., LL.D. / REV. J. L. MORIN, M.A.

Translate into French:

A handful of truths.

1. One day a prince lost himself in a forest in running after a stag. The largest part of his attendants had lost him, and he had with him only his squire and his steward. After a thousand turnings and windings, the prince declared that he was tired and starving; they therefore saw the cabin of a wood-cutter with a joy that the sight of the most sumptuous palace had never caused. The squire and the steward entered the cabin, and were not long to come out, the first with a bench upon which the prince dismounted, and soon sat upon it, the second with a table.—What have you to give us to eat my good man? said the prince to the wood-cutter. Almost nothing said the wood-cutter. Then give it to us very quick before our appetites should still increase. But that needs to be prepared. I have only raw potatoes.

2. Translate into English:—

La dispute.

Deux petits garçons, ayant trouvé une noix, se la disputèrent vivement. —Elle est à moi dit l'un d'eux; car c'est moi qui l'ai vue le premier.—Non, mon cher, elle m'appartient, répondit l'autre; car c'est moi qui l'ai ramassée. Ils en venaient déjà aux mains, lorsqu'un jeune homme, qui était témoin de la dispute, leur dit: Venez je vais vider la querelle.—Il se plaça entre les deux petits garçons, cassa la noix et dit: L'une des coquilles appartient à celui qui le premier a vu (*a*) la noix, l'autre sera pour celui qui l'a ramassée (*b*). Quant à l'amande, je la garde pour prix du jugement que j'ai rendu.—Les deux petits garçons n'étaient pas encore revenus (*c*) de leur étonnement, que le juge, dans sa sagesse, avait déjà avalé la noix. Ils comprirent alors qu'on ne gagne rien à se quereller.

3. *a, b, c.* Explain fully why these three participles are so written.

4. Translate and write the plural of *régal, animal, genou, sou, noix, aval, amiral, gouvernail.* Give the rules to form those plural.

5. Write the feminine and give the meaning of *doux, sec, gouverneur, gros, franc, malin, suisse, frais.*

6. Write in letters the 14th of July, 1789, the Bastille was demolished.

7. When are the possessive adjectives used for *ma, ta, sa?* Give examples.

8. How do you translate *the one, the ones,* 1. referring to a noun; 2. to an adjective. And translate for illustration: *Give me the steel pen and send the gold one to my cousin. Have you the blue ink or the red one?*

9. Translate in two different ways: *I must have books.* Explain how *must* is rendered.

10. Write in full the *Preterite Definite*, the *future*, the *Preterite Indi finite* of *avoir, recevoir, courir, venir* and *vivre.*

11. Colloquial exercises. (Translate).

Are you glad that the holidays are near?—I am very glad of it.—The heat is not pleasant at school.—Are you going to College?—Some of us are going; others are going into business, and others to learn a trade.—Tell me the French for wheelwright, tinman, roofer, seaman.....Dans quel pays sont les plus anciennes montagnes du monde? Où coulent les plus grands fleuves? Aimez-vous à traverser la mer? Oui, beaucoup. Avez-vous jamais peur? Non, monsieur, jamais.—Quelles sont les études que vous aimez le mieux?

DICTATION.

Incendie de Moscou.

Dès la première nuit, celle du 14 au 15, un globe enflamme s'était abaissé sur le palais du prince Troubetskoï et l'avait consumé: c'était le signal. Aussitôt le feu avait été mis à la Bourse; on avait aperçu des soldats de police russe l'attiser avec des lances goudronnées. Ici des obus perfidemment placés venaient d'éclater dans les poêles de plusieurs maisons: ils avaient blessé les militaires qui se pressaient autour. Alors, se retirant dans des quartiers encore debout, ils étaient allés chercher un autre asile; mais près d'entrer dans ces maisons toutes closes et inhabitées, ils avaient entendu en sortir une faible explosion; elle avait été suivie d'une légère fumée qui aussitôt était devenue épaisse et noire, puis rougeâtre, enfin couleur de feu, et bientôt l'édifice entier s'était abîmé dans un gouffre de flammes.

GERMAN.

FRIDAY, JUNE 7th; MORNING, 9 to 10.30.

Examiners, ... { P. TOEWS M.A.
P. T. LAFLEUR, M.A.

I. Translate into English :—Adler's Reader page 14, §§ 2-3.

Jetzt nach vollendetem Geschäfte legte sich dieser wohlthätige Genius wieder zu seinem ernsteren Bruder hin. "Wenn die Morgenröthe anbricht," rief er mit fröhlicher Unschuld, "dann preiset mich die Welt als ihren Freund und Wohlthäter! O welche Freude, ungesehen und heimlich Gutes zu thun! Wie glückich sind wir unsichtbaren Boten des guten Geistes! Wie schön unser stiller Beruf!"

So sprach der freundliche Engel des Schlummers.—Der Todesengel sah ihn mit stiller Wehmuth an, und eine Thräne, wie sie die Unsterblichen weinen, stand in seinem großen dunkeln Auge "Ach," sprach er, "daß ich nicht, wie du, des fröhlichen Dankes. mich freuen kann; mich nennt die Welt ihren Feind und Freudenstörer!" — "O mein Bruder," erwiederte der Engel des Schlafes, "wird nicht auch, beim Erwachen, der Gute in dir seinen Freund erkennen und dankbar dich segnen? Sind wir nicht Brüder und Boten eines Vaters?

So sprach er; da glänzte das Auge des Todesengls, und die brüderlichen Genien umarmten sich zärtlich.

Krumnacher.

Give the infinitive of erhob, trugen, vergaß schlossen.

Accent unsichtbaren, umfing, wohlthätige, anbricht.

Decline in both numbers: Sein bemoos'tes Lager; das unsichtbare Schlummerkörnlein, ländliche Hütte, müder Landmann, unser Schmerz.

Give the nominative plural of Stab, Säugling, Arme, Welt, Geist; and state the gender of Abendwinde, Sorgen, Augen.

II. Translate into German :—In the spring our garden becomes beautiful. We became rich, but he became poor. We have two feet and two hands, and each hand has five fingers. To-morrow

we shall have a holiday, for it is Saturday. Who was right. Were you not wrong? With my friends I have had much pleasure (Vergnügen). Are those your books? These are my pens. Was it your sisters? Was it you? We shall have learned much in a week. To-day we are learning German, to-morrow we shall learn Latin. They would have taken a walk, if they had had time. He believed (glauben) it, because his father said it. The king will send his generals against the enemy. My sister will buy gloves, for her gloves are bad. She will say, that I am right. These men travelled through towns and villages. The gardener was shaking (ſchütteln) the apple tree. The woman wa buying clothes for her children. Those young men had studied diligently (fleißig).

III. Decline: junger, grüner Baum, neue große Kirche, junges mutiges Pferd.

IV. Give the comparative and superlative of hoch, nahe, ſtark, hart.

GEOMETRY.

WEDNESDAY, JUNE 5TH:—MORNING, 9 TO 10.30.

Examiners,..... { G. H. CHANDLER, M.A
REV. R. TAMBS, M.A.
W. MORRIS, LL.B.

Only two questions from each division to be answered.

I.

1. Any two sides of a triangle are together greater than the third side.

2. From a given point draw a straight line which shall be parallel to a given line.

3. Parallelograms upon equal bases and between the same parallels are equal.

II.

4. If the square on one side of the triangle be equal to the squares on the other sides, these sides shall contain a right angle.

5. In obtuse angled triangles, the square on the side subtending the obtuse angle exceeds the squares on the sides containing it, by twice the rect-

angle contained by either of these sides and the straight line intercepted between the obtuse angle and the foot of the perpendicular on that side from the opposite angle.

6. If a straight line be divided into two equal and also into two unequal parts, the squares on the unequal parts shall be equal to twice the square on half the line and twice the square on the line between the points of section.

III.

7. The angles in the same segment of a circle are equal.

8 From a given circle cut off a segment which shall contain an angle equal to a given angle.

9. Divide the circumference of a circle into three equal parts, *or* divide a straight line into three equal parts.

ALGEBRA.

TUESDAY, JUNE 4TH:—MORNING, 10.30 TO 12.

Examiners,..... { G. H. CHANDLER, M.A. / REV. R. TAMBS, M.A. / W. MORRIS, LL.B.

(*Only two questions from each division to be answered.*)

I.

1. Write down the third power of $2x - 1$, the fourth power of $x - 2$ and the square of $x^2 - 4x + 4$.

2. Find the cube root of $\frac{8a^3}{125x^6}$, the fourth root of $256\ a^4\ x^8$, and the square root of $4x^6 - 4x^4 + 12x^3 + x^2 - 6x + 9$.

3. Simplify $\dfrac{\dfrac{x-1}{x+1} \quad \dfrac{x-2}{x+}}{\dfrac{x-1}{x+1} + \dfrac{x-2}{x+2}} - \dfrac{1}{x - \dfrac{2}{x}}$

II.

4. Resolve $a^2 + 4ab + 4\ b^2$, $9\ a^2 - 24ab + 16b^2$, $a^4 - b^4$, $a^6 - b^6$ into actors, and find by factoring thegreatest common measure of $x^2 - 2x - 3$, $x^2 - 7x + 12$, and $x_2 - x - 6$.

5. Reduce the fraction $\dfrac{2x^3 - 7x^2 + 12x - 9}{2x^4 - x^3 - 5x^2 + 3x}$ to its lowest terms.

6. Solve the following equations, being careful to verify your work by substitution:

$$10\,(x+\tfrac{1}{2}) - 6x\left(\frac{1}{x} - \frac{1}{23}\right) = 23,$$

$$\frac{2x+3}{4} + \frac{4x}{3} = \frac{1}{x} + \frac{6x+2}{3} - \frac{x+1}{6}.$$

III.

7. Find x and y from the simultaneous equations, $\frac{2}{3}x - \frac{3}{4}(y-1)$ $x-y$, $\frac{4}{3}(y+1) - \frac{3}{5}(x-1) = y$.

8. Divide the number n into two such parts that the quotient of the greater by the less may be q with a remainder r.

9. Prove algebraically that if the difference of the cubes of any two consecutive even numbers be diminished by 8, the remainder will be divisible by 48.

TRIGONOMETRY.

FRIDAY, JUNE 7TH:—MORNING, 10.30 TO 12.

Examiners, ... { G. H. CHANDLER, M.A.
REV. R. TAMBS, M.A.
W. MORRIS, LL.B.

(*Only two questions from each division to be answered.*)

I.

1. An arc of a circle is 10-ft. long and subtends an angle of 65° 24′ 30″ at the centre, what is the length of the radius?

2. Find the sine, cosine, and tangent of 60°.

3. How do you obtain geometrically the angle of which the cosine is given, *e. g.* $\frac{3}{4}$.

II.

4. Write down the values of sin 120°, cos 150°, tan 210°, cot 240°, sec 300°, cosec 330°.

5. Prove the following relations:

(*a*) $\sin^2 A + \cos^2 A = 1$,

(*b*) $\sec^2 A = 1 + \tan^2 A$,

(*c*) $\operatorname{cosec}^2 A = 1 + \cot^2 A$.

6. Show that

(*a*) $\sec {}_2A + \operatorname{cosec} {}_2A = \sec {}_2A \operatorname{cosec} {}_2A$,

(*b*) $\tan {}_2A + \cot {}_2A = \sec {}_2A \operatorname{cosec} {}_2A - 2$,

(*c*) $(\sec {}^2A - 1)(\tan {}_2A + 1) = \sin {}_2A \sec {}^4A$.

III.

7. Show that

$$\sin (A - B) = \sin A \cos B - \cos A \sin B.$$

8. Show that

$$\frac{\sin A + \sin B}{\cos A + \cos B} = \tan \left(\frac{A + B}{2}\right).$$

9. Show that

$$\cos A = \cos \frac{{}^2A}{2} - \sin \frac{{}^2A}{2} = 2 \cos \frac{{}^2A}{2} - 1 = 1 - 2 \sin \frac{{}^2A}{2}$$

GEOMETRICAL AND FREEHAND DRAWING.

FRIDAY, JUNE 7TH:—AFTERNOON, 2 TO 5.

Examiner,.....C. H. McLEOD, MA.E.

1. Find a mean proportional between two lines measuring respectively 2.1 in. and 1.5 in. (*a*) Construct a square having the same area as the rectangle contained by the given lines.

2. There are two circles having diameters of 1 in. and 1.5 in. The distance between the centres of the circles is 1.5 in. Draw all the tangent lines common to the two circles.

3. Find, by an approximate method, a straight line equal in length to one-sixth the circumference of a circle of one inch radius.

4. Construct an ellipse, the diameters of which are respectively 3 in. and 2 in. long. (*a*) Draw a tangent to the ellipse at any point not in one of the diameters.

5. There are two circles as in question 2. Draw all the circles of 3 in. diameter touching both the given circles.

6. Make a drawing, to about one half size of the "egg-and-da" ornament before you.

7. Outline a design for a border or moulding.

8. Place a cube in perspective a short distance to the right and below the level of the eye. The upright faces are to make about equal angles 45° with the picture plane. Show the vanishing points.

9. Make a freehand drawing of the objects before you, as they appear from your point of view.

(*a*) The cup and saucer.

(*b*) The cross standing on a pedestal of three steps.

NOTE.—Omit question 7 or question 8. In the problems 6, 7, 8 and 9 do not use any instrument whatever, they are *strictly freehand.* In the first five questions show all construction lines as light or dotted lines, and obtain all results by *direct construction,* not by *trial.*

ENGLISH LANGUAGE.

SATURDAY, JUNE 8TH :—MORNING, 10.30 TO 12.

Examiners, ... CHAS. E. MOYSE, B.A.; REV. PROF. SCARTH, M.A.; REV. PROF. ALLNATT, M.A.; P. T. LAFLEUR, M.A.

(Do the Analysis prescribed in (A) and answer any *two* questions from (B) and any *three* from (C) and (D).

A.

Analyse :

Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay ;
Princes and Lords may flourish or may fade,
A breath can make them as a breath has made.

B.

1. Classify the consonants *p, t, m, l, r, g, z.* What is *h?* Account for the sound of *s* in wraps, rubs, looks, bees.

2. What is a diphthong? Which of the following words contain improper diphthongs, and why—receive, noun, friend, believe, boil, great?

3. Write (*a*) three Teutonic (*b*) three Classical suffixes which form abstract nouns; (*c*) two nouns formed by each suffix. Give four examples of the change of the root vowel of an intransitive verb to form the corresponding transitive. What are these latter verbs generally called?

C.

1. Give an example of the Infinitive (with 'to' expressed) as subject, complement and object respectively. Indicate the syntax of the infinitive in: I saw the man fall; I am ready to faint; he left the poor man to bleed to death; a house to let; What hope have we but to die?

2. Correct and give reasons for your corrections:

The effluvia was disgusting.
In modern English two negatives destroy one another.
Can you see a red and white flag? I can see neither.
He was angry at me asking him the question.
Between you and I he knows nothing.

3. Classify the Substantive *or* the Adjective Pronouns.

4. Express clearly and illustrate two of the leading meanings of each of the following prepositions, *at*, *by*, *with*. Use the essential meaning of *of* to disclose what is meant by that preposition in: That is very good of you; it smells of musk; tempted of the Devil; he made a fool of me.

5. Name the two classes of conjunctions. Refer each of the following to its class and division or divisions; that, though, and, than, either, but, unless, since.

D.

1. Show that the following words have deteriorated; resent, retaliate, animosity. What does Trench say concerning abhominable and frontispiece?

2. Take three names of flowers which show the poetry in words. What poetical ideas lie beneath the words mariposa and stellio? Contrast marshal and alderman.

3. State briefly how new words and synonyms arise. Distinguish between *felicitate* and *congratulate*; *interference* and *interposition*.

4. In proof of what does Trench refer (*a*) to the language of savage tribes (*b*) to Norman speech as opposed to Saxon (*c*) to the Arabs. What is meant by comprehensive words?

5. State Trench's view concerning

(*a*) The origin of language.

(*b*) Phonetic spelling.

EMGLISH LITERATURE.

THURSDAY, JUNE 6TH:—MORNING, 9 TO 10.30.

Examiners,..... { REV. PROF. SCARTH, M.A.; REV. PROF. ALLNATT, M.A.; CHAS. E. MOYSE, B.A.; P. T. LAFLEUR, M.A.

(Answer *two*, but not more than two, questions from each part.)

I. GENERAL.

1. About what year does the history of English Literature begin? What were the peculiarities of *Old English Poetry?* What changes crept in after the Norman Conquest?

2. Give a short account of *Chaucer's Character* and a brief description of the *Canterbury Tales*.

3. Give the author of each of the following works: Arcadia, Samson Agonistes, Pilgrim's Progress, Gentle Shepherd, Task, Fair Maid of Perth, Deserted Village, Queen Mab, Idylls of the King.

II. JULIUS CÆSAR.

4. When was "Julius Cæsar" written? What period of Roman History does it embrace? Give a general outline of the tragedy.

5. Describe the death of Cæsar as given in Act III.

6. Write a short account of Antony's speech over Cæsar's body, and quote the opening lines of it.

III. LADY OF THE LAKE.

7. Give a brief outline of the story of the *Lady of the Lake*.

8. Give a short description of Canto V. and write from memory six consecutive lines from it.

9. Explain the words—cairn, dingle, gyve, jennet, mavis, rowen, strath, wold.

HISTORY

THURSDAY, JUNE 6TH:—AFTERNOON, 2 TO 3.30.

Examiners,..... CHAS. E. MOYSE, B.A.
REV. PROF SCARTH, M.A.
REV. PROF. ALLNATT, M.A.
REV. E. I. REXFORD, M.A.
P. T. LAFLEUR, M.A.

(Not more than six questions are to be answered, three from Division I. and three from *either* Division II. *or* Division III.; but not more than three from any one division.)

I.

1. Explain *briefly* what is meant by:—Amphictyonic Council, Ephors. The Four Hundred, Tribunes of the Plebs, Laws of Licinius and Sextius. First Triumvirate, Fall of the Western Empire.

2. Who were:—Themistocles, Socrates, Pausanias, the Gracchi, Sulla, Marcus Aurelius?

3. Give a short account, without detail but with dates, of the conquests of Alexander, *or* of the wars with the Samnites.

4. (*a*) Explain how it came about that the Emperors of Rome were at last chosen by the soldiers, and tell what effects this produced; *or* (*b*) contrast Athens and Sparta as regards social life, art, and military organization.

II.

1. What is meant by: Mayors of the Palace, Capitularies, Assize of Jerusalem, Les Gueux, the Palatinate, assignats, Vehmgericht.

2. Ascribe each of the following to the person by whom it was spoken, and comment briefly on the circumstances which gave rise to it:—

The sword is the key of heaven and hell.

Why hast thou that second arrow?

Well doth it become thee to weep like a woman for what thou couldest not defend as a man.

Here I take my stand; I can do no otherwise. So help me God.

Madame, all is lost save honour.

Ah, my brother wishes to play the part of Alexander—he shall not find a Darius in me.

3. Give some account of Germany at the time of the Reformation, *or* of life in France under Louis XIV.

4. Shew the importance of, and explain briefly but clearly, the part played in history by each of the following:—Charles V., Gustavus Adolphus, Robespierre, Coligny, the De Witts, Maurice of Saxony, Attila.

III.

1. Give a short account of the life of Jacob.

2. Arrange the following events in their chronological order, and give the dates of any two of them:—the Exodus, the call of Abraham, the Flood, the Captivity, the building of Solomon's Temple, the death of Moses, the Establishment of the Kingdom of Israel.

3. Draw an outline map of Palestine as in the time of Christ, and insert the following:—Dead Sea, Sea of Galilee, Jordan, Mediterranean, Tabor, Hermon, Bethlehem, Jerusalem, Nazareth, Capernaum, Tyre, Sidon, Sychar.

4. Give a short account of any one of our Lord's miracles.

5. On what occasion and by whom was each of the following expressions used:—

Who warned you to flee from the wrath to come?

Judge not, that ye be not judged.

Get thee behind me, Satan!

It is finished.

Almost thou persuadest me to be a Christian.

GEOGRAPHY.

THURSDAY, JUNE 6TH :—MORNING, 10.30 TO 12.

Examiners, ... { REV. PROF. SCARTH, M.A.
REV. PROF. ALLNATT, M.A.
CHAS. MOYSE, B.A.
P. T. LAFLEUR, M.A.

(Answer *two*, but not more than two, questions from each group.)

I.

1. Define and explain the terms tropics and Ecliptic; and describe the phenomena which determine the positions of these circles.

2. Name in order of relative position the seas, bays and gulfs which lie around the coasts of Asia.

3. Describe the Gulf Stream, its origin, character, and course.

II.

4. Name, and describe the situations of the countries of Africa, giving their capitals.

5. Name, in order of relative position those of the United States which are Maritime, or reach the sea.

6. Describe the situations of the following :—Baie des Chaleurs, Georgian Bay, Nelson River, Richelieu River, Manitoulin Island, Magdalen Islands, Agoma, Lake Nipissing.

III.

7. Describe the situations of the following :—Pictou, Hamilton, Victoria Sorel, Charlottetown, Brockville, Yarmouth, Hull.

8. Give the name, situation, and chief towns, of some one county in England, Scotland, Ireland and Wales, respectively (other than the county containing the capital of the country.)

9. Give the boundaries, principal cities, and form of government of some country (other than France) on the main continent of Europe.

BOTANY.

THURSDAY, JUNE 6TH :—AFTERNOON, 3.30 TO 5.

Examiner, ... D. P. PENHALLOW, B. Sc.

I

1. Explain the distinction between Herbs, Shrubs and Trees.

2. When are flowers said to be Monopetalous and Polypetalous ? Give examples.

3. State clearly, the characteristics of a raceme, spike, umbel, head; and give examples.

4. Explain what is meant by the terms deciduous and evergreen. Examples.

II.

5. Explain fully the structure of an ovule.

6. Explain the structure of the pistil, and show how it differs in the Gymnosperms and Angiosperms.

7. Classify the following fruits: apple, cherry, gooseberry, strawberry, raspberry, plum, pear, pea, acorn, grape, peach, bean.

8. Give a concise statement of the component parts of a seed.

III.

9. Give the principal characteristics of an exogenous plant. Example.

10. Give the principal characteristics of an endogenous plant. Example.

11. Give the leading divisions of the vegetable kingdom, and explain the leading characteristics of each.

12. Describe the plant given.

The candidate is required to answer two questions from each division. Number twelve is imperative.

The examiner will kindly supply any common flower.

CHEMISTRY

SATURDAY, JUNE 8TH:—MORNING, 9 TO 10.30.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

NOTE.—Answer two questions from each group.

I.

1. Give several examples showing that solution aids chemical action.

2. Why is air regarded as a mixture and not a chemical compound?

3. How may the composition of water be determined (*a*) by volume and (*b*) by weight?

II.

1. What do you understand by combustion? What is meant by the term kindling temperature?

2. How would you prepare Nitric Acid? Give a sketch of the apparatus that you would employ.

3. Write four equations expressing well-known chemical reactions.

III.

1. State carefully what you know with regard to acids, bases and salts.

2. How does Carbon Dioxide occur in nature? How may it be prepared in the laboratory? What are its properties?

3. Describe the preparation and properties of Phosphorus. In what respects does Red Phosphorus differ from the ordinary form?

PHYSIOLOGY AND HYGIENE.

FRIDAY, JUNE 7TH,—MORNING, 9 TO 10.30

Examiner,.....J. WM. DAWSON, LL.D.

NOTE.—*Answer three questions out from each group.*

A.

1. Explain the uses of the Muscles and the effects of exercise and disuse.

2. Name the principal kinds of food, and classify them as tissue-making and heat-giving.

3. Explain the digestion of food, stating the organs, fluids and processes.

4. What are the uses of breathing, and the effects of deficient or impure air?

B.

5. What are the structures and uses of the skin, and the uses of cleanliness?

6. Describe the principal parts of the brain and nervous system, and their uses, and how these may be helped or hindered.

7. State what you know of Alcohol and its effects on the system.

8. What are the effects of the habitual use of Opium and Tobacco?

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